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Defense Needs 30 Per Cent of Paper Supply

Chief of Pulp and Paper Branch of OPA Asks Voluntary Cooperation of Industry With Government To Solve Problems of Paper Consumption—Defense To Absorb 30% of Total Supply In 1942.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 14, 1941—Government and industry must work together in the coming year to solve the problems resulting from consumption in defense activities of 30% of the nation's available paper supply, Norbert A. McKenna, Chief of the Pulp and Paper Branch and Acting Chief of the Printing and Publishing Branch of the Division of Civilian Supply, said in an address in Chicago today before the Inland Daily Press Association.

Mr. McKenna said that with the national defense picture changing from month to month, he could not accurately forecast future defense requirements. He stated, however, that there seemed to be no imminent shortage of newsprint unless an unexpected demand from other types of paper and paper board should absorb the excess capacity still existing in Canada.

Newspapers, magazines and other users of paper can help the government in its efforts to conserve paper and make sure that available supplies are distributed on an equitable basis so that business enterprise and jobs are maintained, he said.

Mr. McKenna said in part:

Defense May Take 30% of Paper Supply

"It is our problem and it is your problem next year to meet this shortage occasioned by the consumption of 30% of the available paper supply by defense. Perhaps we will be successful in so stepping up our defense efforts that more paper will be needed. If the war lasts, and well it may, we may have to give up a large number of our employees to direct defense industries and we may have to give up a considerable portion of railroad cars usually available to us to the transportation of defense products.

"We of the OPM challenge you to form a gigantic 'V' for victory in our battle on the home front. On one side of that 'V' we will mobilize your producing industries by forming hard working industry advisory committees of the best men available from management and labor. On the other side of the 'V' we will organize consuming industries in the same way.

"From the producing side we will derive recommendations as to how more reams of paper can be produced from the same ton of pulp. From the consuming side, we will obtain recommendations as to how paper can be more conservatively used.

"For instance, we may give the newsprint industry advisory committee the problem of recommending to us the establishment of certain production practices and standards which shall produce the most reams from tonnages the volume of which have been diminished by labor and transportation shortages.

Members of Advisory Committee

"We must provide the maximum number of printable units to your industry in order that the public be served and speech be free. We then give your industry advisory committee consisting of J. S. Gray of the Monroe Publishing Company, Monroe, Michigan, Fleming Newbold, Evening Star Newspaper Co., Washington, D. C., Paul G. Strombert of the Ellicott City Times, Ellicott City, Maryland and S. E. Thomason, The Chicago Times, Chicago, Illinois, the problem of recommending to us how those reams can be distributed most equitably over publishing use.

"The solution may require the trimming of margins, reduction in number of pages, elimination of over deliveries, elimination of non-essential uses of newsprint. Your industry and your committee can help solve the problem. We must be sure the solution is effective and equitable. Above all, the purpose must be to provide paper for every newspaper equitably so that proprietorships and jobs are maintained. By efficient committee work and good generalship, we can do our share for defense by thus guarding the home and factory front.

"We may issue orders from time to time establishing practices in the production and use of paper, but first we will seek your advice. These orders will fill defense needs first and at the same time so equitably distribute paper as to maintain the continuity of your businesses and your jobs.

"In this way, government leads industry to a common good. In this way, on a kind of village green, the

(Continued on page 22)

Consolidated Co. Tours Its Timber Tracts

Marks Tenth Anniversary of Inauguration of the Company's Own Reforestation Program — Appleton Plan To Serve As National Model For Collection of Waste Paper — Other Late Trade News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 13, 1941—Marking the tenth anniversary of the inauguration of its own reforestation program, the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., held a tour October 10 to its 25,000-acre tract in northern Wisconsin. Included in the party were company officials, forestry leaders, paper manufacturers, newspaper publishers, lumbermen and others.

The tour began at 8:30 in the morning at Summit Lake, Wis., and took the guests to the scenes of various planting and logging operations, in Langlade and Forest Counties. It ended at the Consolidated's forestry farm, where lunch was provided and talks were given concerning the history of these operations.

Numerous members of the Society of American Foresters, among them Henry E. Clepper, executive secretary, of Washington, D. C., joined the tour, prior to attending the society's fall convention opening the evening of October 10 at Iron River, Mich., about forty miles from the Consolidated operations.

Consolidated's program was given a definite start ten years ago by Emmett B. Hurst, who has served during that entire time as the company's director of forestry. It was the outgrowth of a ruinous forest fire in 1930 that swept over the southeastern end of Langlade County. A forestry conference was held at that time under the leadership of Stanton W. Mead, vice-president and director of manufacturing for Consolidated. Among the men attending were E. W. Tinker, at that time director of federal forests in the north central region and now the executive secretary of the American Paper and Pulp Association; C. L. Harrington, director of Wisconsin's forests and parks; C. P. Winslow, head of the United States Forest Products Laboratory at Madison, Wis., and Dr. Raphael Zon, director of the United States Lakes States Forestry Experimental Station in St. Paul, Minn.

Tree Nursery Started at Biron

First step was the establishment of a tree nursery at Biron, Wis., where one of the Consolidated mills is located. The nursery has supplied trees not only for its own cutover lands, but furnished 2,000,000 white and Norway spruce seedlings in 1934 to the Nicolet and Chequamegon National forests in Wisconsin, and the federal forests in Upper Michigan. Numerous other seedlings have been supplied for federal and state plantings. The nursery now ranks as the largest in the state.

A new nursery has recently been established at the Consolidated's farm in Forest County, and it was formally opened during the tour. A huge steel fire control tower has been built there, and is operated in cooperation with the U. S. Forest Service in Nicolet National Forest. Its telephone is connected to the system serving other fire towers.

To Use Appleton Plan as Model

Collection of waste paper as an activity sponsored by the Government will be conducted nationwide using a plan to be inaugurated at Appleton, Wis. Mayor John Goodland, Jr., has received a request from the Government to devise an "Appleton plan" to be used as a national model.

Heads of various civic organizations are being called into consultation with the Mayor to prepare the campaign. It is pointed out that the paper industry throughout the United States is in serious need of raw material from this source, with the possibility that production must be hiked 50 per cent in 1942. The shortage of pulp formerly received from Norway and Sweden brings the alternative of salvaging waste material as much as possible.

Heavy Rains Hamper Work on Dam

Work on the new dam under construction on the Wisconsin River near Knowlton, Wis., by the Consolidated Water Power and Paper Company was hampered last week by heavy rains that raised the water level to flood proportions. A section of coffer dam 150 feet long was washed out, and other damage was caused.

Highwater made it necessary for the Wausau Paper Mills Company at Brokaw, Wis., to suspend operations while electric motors were moved to a safe level. About a foot of water flooded the basement. The company had been forewarned of the flood conditions, therefore were prepared to prevent damage to electrical equipment.

Five gates were opened at the Consolidated Water Power and Paper Company's dam to release the flood waters. The vast Big Eau Pleine reservoir of the Wisconsin Valley Improvement company is filled to capacity.

Appleton Mfg. & Lumber Co. Sold

Theodore Holzem of Milwaukee, Wis., has purchased the Appleton Manufacturing and Lumber Company plant at 228 E. North Island Street, Appleton, Wis., from William Nemacheck. The company manufactures mill supplies such as suction box covers, beater paddles, skinner sticks and other items.

Wisconsin Paper Men are Married

Owen E. Lyons of Appleton, Wis., and Miss Josephine Snyder of Milwaukee, Wis., were married Thursday morning, October 9, at St. John's Cathedral, Milwaukee, by the Rev. G. W. Hafford. The couple is spending three weeks in the South on a honeymoon trip and will reside at 120 E. Franklin St., Appleton. Mr. Lyons is advertising manager of the Menasha Products division of the Marathon Paper Mills Company at Menasha, Wis.

Eugene Mason, sales manager for the Rhinelander Paper Company, Rhinelander, Wis., and Miss Alice Lascewski of Stevens Point, Wis., were married Saturday morning, October 4, at Rhinelander. Upon their return from a honeymoon trip, the couple will reside at Pelical St., in Rhinelander.

Canada Expands Production of Corrugating

Product Is Largely Exported To the United States—Because of the Increased Sales, Canadian Paper Manufacturers Are Expected To Show Improvement In Both Their Gross and Net Earnings.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., October 13, 1941—Due to increased sales other than newsprint, it now seems assured that most of Canada's leading pulp and paper companies will this year show improvement in both gross and net earnings over 1940, despite the fact that actual newsprint output has shown little change compared with a year ago. One of the factors is production of the new product, 0.009 paper, for sale in the United States market to boxboard manufacturers, who will use the paper for corrugated boxes. The 0.009 paper requires 3590 sulphite pulp, the balance being groundwood pulp. It is explained here that the reason Canada is getting this business is that there is a shortage of sulphite pulp in the United States. The price received for the new paper is between $70 and $80 a ton, U. S. funds, with the buyer paying tariff charges. The paper can be made on newsprint machines, thus permitting higher operating activity at the mills, and proportionately higher profits.

Other aids to profits of paper companies have come from sales of pulp, of boxboard and various other products, where the companies have facilities for production of such products for sale.

Although total shipments of newsprint from Canadian mills has shown some decline from those of last year, this is wholly accounted for by a falling off in overseas shipments, those of the United States having been larger. Thus for the eight months to the end of August the total shipments amounted to 2,204,828 tons, as compared with 2,300,662 tons. This was a drop of 95,934 tons. The total shipments included 324,502 tons to overseas, a drop of 134,282 tons as compared with those in the similar period of last year. On the other hand the shipments to the United States amounted to 1,753,782 tons, an increase of 32,544 tons.

"Bits and Pieces" Work Helps

Another source of revenue to newsprint manufacturers besides those mentioned above come from what is called the "bits and pieces" program of the Department of Munitions and Supply. This is in the shape of contracts placed with the machine shops of the pulp and paper companies for parts required in the munitions industry. The machine shops of the companies are extensive and efficient. Hitherto they have been operated 8 hours a day, but now they are operated on a 24 hour basis, the remaining 16 hours being occupied in filling sub-contracts for war purposes.

Three offices for the oversight of this "bits and pieces" program have been established, these being at Montreal, Toronto and Winnipeg, and two more are contemplated, one in the Maritime Provinces and one at Vancouver, their purpose is to make surveys of all available plants and facilities the initiative and direction.

Co-operating with this plan, the Canadian Pulp and Paper Association has what is called a Wartime Machine Shop Board composed of the following: R. L. Weldon, of Bathurst Power and Paper Company, chairman; F. L. Allen, International Paper Co., vice-chairman; T. E. Silver, Abitibi Power and Paper Company; E. D. Hyndman, Anglo-Canadian Pulp and Paper Mills, Ltd., and H. J. Daubney, of Gair Company, Ltd., Toronto.

Quebec Pulp and Paper Corp.

For the first time in years the Quebec Pulp and Paper Corporation is once more an operating corporation. This company, whose headquarters are at Chicoutimi, Que., has two groundwood mills of a rated capacity of 600,000 lbs. per 24 hours, but the mills have long been idle, and the machines are regarded as obsolete. There has been talk from time to time of government assistance in the installation of new machinery required to put the mills on a commercial basis and this perhaps may occur should a shortage of pulp develop. Meanwhile the company's machine shop has been kept in good repair and is now working on substantial orders received as sub-contracts for "bits and pieces" in war materials. The company has other sources of revenue from the sale of cordwood, and a considerable sum is expected to be received as compensation for the flooding of the corporation's timber reserves in the Peribonka River basin as a result of the big new Shipshaw power development of the Aluminum Power Company.

May Add Duty on Canadian Board

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 15, 1941—Import duty on paper board brought in from Canada may be added to the delivered price by buyers in the United States, even though this results in a total cost which exceeds the maximums established in the paper board price schedule, Leon Henderson, administrator, Office of Price Administration ruled today.

In no event, however, the administrator added, shall the delivered price exceed the ceiling prices set in the schedule, plus the actual amount of the import duty. Importers of Canadian paper board are required to show the import duty as a separate charge in their invoice records.

Increased demands for paper board boxes for packaging national defense materials and civilian articles makes the use of Canadian corrugating materials of special interest to box manufacturers, as well as buyers of boxes. Caliper .009 corrugating material is the principal grade of paper board imported from Canada by United States box makers.

W. M. Fischer in Paper Section

WASHINGTON, D. C., October 15, 1941—W. Max Fischer has been appointed to the OPM paper section. Mr. Fischer has had fifteen years' experience in the paper industry and was formerly acting general of the Curtis Paper Company and associated companies in Newark, Del. His home is in Philadelphia.

Paper Men Attend Annual Safety Congress

Plant Managers and Safety Engineers of Paper and Allied Industries In Attendance At 13th National Safety Congress and Exposition—Practice of Allocation of Paper Increasing — Other News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., October 14, 1941—More than 10,000 executives from all parts of the United States convened in Chicago this week, attending the thirtieth National Safety Congress and Exposition held at the Stevens Hotel, October 6 and 10. Included in the group were safety engineers and plant managers representing scores of paper manufacturers and allied industries. The Paper and Pulp section was unusually well attended and while a great deal of attention was given to the general importance of accident prevention as a contribution to national defense, the industry found time to thoroughly review its own pertinent problems. D. B. Chant, of the Ontario Pulp and Paper Makers Safety Association of Toronto, Ontario, Canada, is general chairman of the Section while Clayton O. Braatz, Marathon Paper Mills Company of Rothschild, Wis., is vice-chairman. Roland W. Richardson, The Gardner-Richardson Company of Lockland, Ohio, is secretary and program chairman.

Paper and Other Sectional Meetings Held

Section meetings got under way on October 6 with Chairman Chant reporting on the years activities. F. W. Braun, vice-president of Employers Mutuals and Chairman of the Statistics Committee of the Paper and Pulp Section, reviewed 1940-41 paper and pulp accident experience and R. B. Robertson, Jr., vice-president of the Champion Paper and Fibre Company, discussed "Accident Control as a Phase of Operation in the Paper and Pulp Industry."

The following afternoon a group session for paper products plants was held with J. W. Kuebler of the Dixie-Vortex Company presiding. Mr. Keubler is chairman of the Paper Converter Products Committee of the Paper and Pulp Section. At this group session "Safety in the Manufacture of Paper Products" was discussed by M. L. Cashman, district engineer of the Liberty Mutual Insurance Company. J. Fred Berry, Personnel Manager of the Alton Box Board Company, lead the very interesting discussion which followed Mr. Cashman's remarks.

On the same afternoon a group session was held for Pulpwood Loggers with J. E. Cantin, safety director of the Quebec North Shore Paper Company of Quebec, Canada, as the presiding officer. With no principal speaker at this session the delegates thoroughly participated in a round table discussion of safety problems in pulp wood logging operations.

Report Made on Paper Safety Contest

On October 9, A. Scott Dowd, chairman of the Contest Committee of the Paper and Pulp Section made a final report on the 1940-41 paper industry safety contest and the presentation of Contest Awards made. Coveted trophies are the National Safety Council Trophies and the Edward Benton Fritz Memorial Trophy which Mr. Dowd himself presented.

To wind up the most interesting session in many years, the entire Section participated in a discussion on "What Would You Do?" with W. F. Cook of the Lakeview Mill of the Kimberly-Clark Corporation, leading this discussion. The exchange of viewpoints permitted representatives of the pulp and paper industries to ask questions concerning their accident problems as well as to contribute ideas and experiences for the benefit of others in the audience.

Tuesday, October 8, was Paper & Pulp Section Day at the Exposition where nearly 150 leading manufacturers presented about everything available in the safety equipment field.

Allocation of Paper Increasing

All that the Chicago paper market could report at the end of the first week of October was an increasing "tightness" brought on, not only by actual raw materials scarcity, but also because of the local publicity given to the pulp situation. The practice of allocating paper to customers, adopted as an innovation some weeks ago, is reported to now have become a standard practice. Demand increased materially along with the upturn in retail buying because of the advent of excise taxes and the paper industry here finds itself confronted with demands paralleled only by Christmas rush periods.

Sulphites were hard pressed to supply demand while deliveries were getting later and later in book and cover fields. The kraft market continued with no change except for added pressure for paper. Bonds and ledgers were in a similar situation while waste papers, contending with a "ceiling" were working through a paradox wherein they were seeking more paper but prevented from making more than specified bids for it. All other markets were definitely of the "seller" variety as mills were reported to be gradually getting farther and farther behind in production schedules.

Paper Men In Chest Campaign

The Chicago Community Chest campaign got under way this week with the paper industry again slated to take an important part in the task of raising $3,585,000 for Chicago charities. The paper and printing group has been assigned the job of securing $33,000 as its share and E. S. French of the Crossett Lumber Company has been given the job of over-all chairman. Other leaders in the paper group include the following: Fine papers, manufacturing, Sterling Brown of the Champion Paper Company; Corrugated boxes, Joseph Burns, American Box Board Company; Paper bags, Ed Fritchie, Lincoln Bag Company; Folding boxes, W. E. Hardy, Imperial Box Company; Coarse Papers, Frank X. Meiners, Filler Fibre Company; Waste Papers, Al Meisterheim; Set up paper boxes, Harry Sayre, Set Up Paper Box Association; Coarse Papers, Sam Weil, J. Weil & Sons, and Fine Papers, William White, James White Paper Company. Each chairman is now selecting assistants to spread the work over a large area and from now until December the paper industry locally will do its part.

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OF A
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● More than one production man is today praying that nothing will arise to disturb daily output.

● That's why Black-Clawson ***seamless*** dryers are preferred in so many mills. After you install 'em you can forget 'em. They dry uniformly from edge to edge . . . their inner sealed surface doesn't rust as rapidly as bored surfaces . . . and they stay in balance year after year.

● B-C seamless dryers are so much the preference, in fact, that over 18,000 have been sold . . . and we've yet to see the second operating failure. We've checked them for balance, too, finding that in one group of 77 twenty year old veterans, none was off more than .041", with the average much less.

● Put your trust in B-C seamless dryers. There's not a production headache in an entire stack. **THE BLACK-CLAWSON COMPANY, Hamilton, Ohio, Shartle Division, Middletown, Ohio. Dilts Division, Fulton, N. Y.**

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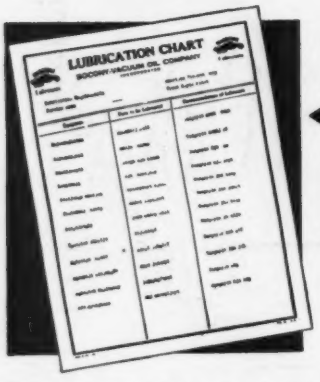
Over half the world's capital turbine units rely on this same famous brand for dependable lubrication.



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Lubricants

Correct Lubrication"

Superintendents Meet at Green Bay

Homecoming Convention Is Attended In College Boy Attire By Some 350 Members and Guests From Wisconsin, Michigan and Minnesota—Chlorine Shortage Is Among the Outstanding Topics.

[FROM OUR REGULAR CORRESPONDENT]

GREEN BAY, Wis., October 13, 1941—To lend a bit of informality to an otherwise serious session called to discuss critical situations, members of the Northwestern division of the American Pulp and Paper Mill Superintendents Association appeared at business meetings at the annual fall gathering here Friday and Saturday of last week dressed like a bunch of college boys.

The affair was called a "homecoming convention." As each man registered, he was given a college sweater, "frosh" cap and horn-rimmed spectacles minus the lenses, and went to the meetings in this "post-graduate" manner. The women guests were given jaunty "bush" coats, bandana headdress and spectacles.

Chlorine Shortage Discussed

Headquarters for the convention were at Hotel Northland, where registration was in progress Friday morning. The entire business session starting at 2 o'clock Friday afternoon was devoted to the chlorine shortage under OPM priorities. Dr. E. I. Laughlin of the Wilmington, Del. laboratory of the E. I. Du Pont de Nemours Company, started off the program with an address on the subject, "The Influence of Dyes in Coloring Duller Pulps Resulting From the Necessary Reduction of Chlorine in Pulp Bleaching." He said the industry must continue at its present pace even if the chlorine shortage meant production chiefly of colored stock. Efforts of the laboratories to meet the situation were described. Dr. Laughlin was assisted in his presentation and in the discussion by Dr. Philip Nolan of the Institute of Paper Chemistry, Appleton, Wis., and Dr. Martin Downs and Edward Luedke of the Thilmany Pulp and Paper Company, Kaukauna, Wis. Later Dr. J. A. Vanden Akker of the Institute, submitted the latest information available on orientation of fibres on Fourdrinier wires. H. W. Sherman, chairman of the division, presided.

A luncheon was held for the men Friday noon at the Northland hotel, and the women were guests at a bridge luncheon at the Y.M.C.A. A stag dinner was held at the Beaumont hotel in the evening, with five acts of vaudeville. The women enjoyed a dinner at the Northland, followed by a theater party.

Lloyd Lang Speaks

The speaker at Saturday morning's session was Lloyd Lang of the Kimberly-Clark Corporation, Neenah, Wis. His subject was "External Direct Steam Heating for Digester Circulation." A round table for pulp mill problems concluded the session. Walter A. Johnson presided at the meeting.

After a luncheon Saturday at the Northland, the superintendents participated in a golf tournament at the Oneida club, and a skeet shooting tournament at the Brown County Gun Club. Visits also were made to the Northern Paper Mills and the Hoberg Paper Mills, Inc. The women left in the morning for a sightseeing tour of Door County, and had a luncheon at Glidden Lodge, on Lake Michigan.

Homecoming Dinner Dance

The convention closed with a "homecoming" dinner-dance Saturday evening at the Beaumont hotel. A highlight of the affair was the presentation of a special award and life membership to Frank J. Timmerman, associated with the Northern Paper Mills at Green Bay for over 40 years. He recently retired as mill manager.

Approximately 350 members and guests from Wisconsin, Michigan and Minnesota were in attendance. Arrangements were handled by a committee of officials from the Northern and Hoberg mills, including H. W. Sherman, chairman; Mrs. Sherman, chairman of the women's program; A. K. McNaughton, Don Fairbairn, Walter Johnson, John Maloney, Jr., Gus Klaus, N. L. Malcove, H. L. Nichols, W. J. Clancy, H. F. Bins and E. C. Jacobi.

OPA Stabilizes Bag Prices

WASHINGTON, D. C., October 15, 1941—Manufacturers' prices for common brown paper grocery bags, have been stabilized for the time being by a series of voluntary understandings with leading producers, Leon Henderson, Administrator of the Office of Price Administration, announced today.

This arrangement is a temporary one designed to minimize price disturbance pending completion of a study by OPA of all phases of the paper bag industry. The price problem will be reconsidered in the light of information developed by this investigation.

The present voluntary understandings were reached with makers responsible for about 80% of the industry's total output. They provide that the prices which have prevailed for the past few months in all territory East of the Rocky Mountains shall not be increased without two weeks' advance notice to OPA.

Grocery bag prices are quoted by applying a succession of 5% discounts to uniform base prices for the various sizes. Current bag prices are figured on the basis of a total of 26 discounts of 5% (or 26/5's, in trade terms) for carload lots, with 10% added for less than carload lots.

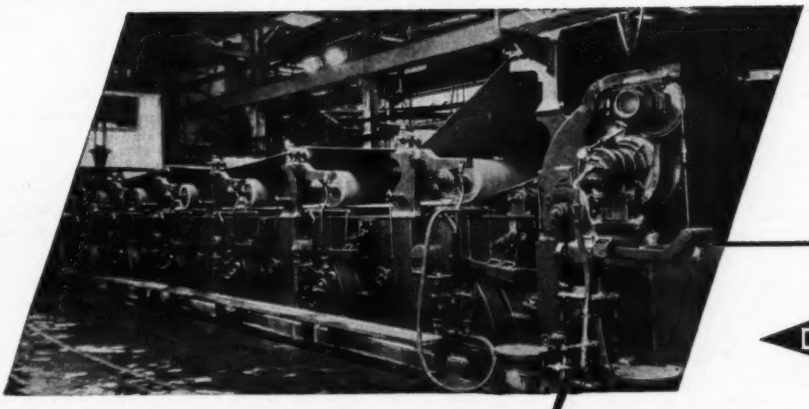
Cameron Machine Co. Expands

The Cameron Machine Company, Brooklyn, N. Y., announces that plans are being drawn for a $100,000 extension to its already large assembly floor.

This extension is made necessary by the unprecedented demand for the machines built by the company, which machines are used in paper mills, paper converting plants, also in the fabric and rubber industries for slitting materials into narrow widths and rewinding the slit strips into rolls or in other words making smaller rolls out of larger ones.

The company expects by this means, to be in a position to accelerate building of its machines, many of which are used by the customers of Cameron Machine Company in connection with defense contracts they are working on.

DOWICIDES INCREASE FELT LIFE



DOWICIDE* G—used as a germicidal solution to wash felts during shut-downs—has proven an effective means of preserving and increasing felt life.

In mills where felts are subject to heavy manufacturing loads and where there are no shut-downs between felt changes, DOWICIDE G is being added to the system continuously. Felt life extension of from 50% to 200% has resulted when a concentration of 50 parts per million has been used.

As a group, the DOWICIDES have a wide variety of uses in the paper field. For more complete technical information on DOWICIDE G or any other DOWICIDE application, write

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Use Dowicides

- To prevent stain and decay on pulp wood.
- For control of slime conditions.
- To prolong felt life.
- For rot and termite-proofing.
- For mold-resistant paper products.
- To preserve proteins, starches and other coating materials.
- To reduce maintenance costs.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 15, 1941 — Government Printing Office has received the following bids for 200,000 sheets of 22 x 28 white railroad board: Bradner Smith & Company, $27.075 per M sheets; Barton, Duer & Koch Paper Company, $28.35; Stanford Paper Company, $27.09 and $27.94; and R. P. Andrews Paper Company, $27.99.

For 43,240 pounds of 22½ x 28½, 50% rag, index paper, half buff and half salmon: Whiting Paper Company, 18.5 cents; Walker, Goulard Plehn Company, 17.25 cents; and Barton, Duer & Koch Paper Company, 17.1 cents.

For 56,000 pounds of 25 x 30 binders' board: R. P. Andrews Paper Company, 4.2 cents; Mathers-Lamm Paper Company, 4.17 cents; and Consolidated Paper Company, 4.5 cents less 2%.

For 20,000 sheets of 22 x 28 red railroad board: Bradner Smith & Company, $36.95 per M sheets; Barton, Duer & Koch Paper Company, $36.98; Whitaker Paper Company, $51.45; Virginia Paper Company, $42.35; and R. P. Andrews Paper Company, $36.99.

For 33,800 pounds of 28 x 41 dull coated book paper: Barton, Duer & Koch Paper Company, 13.75 cents; Whitaker Paper Company, 10.18 cents; Mudge Paper Company, 10.16 cents; and Bradner Smith & Company, 9.98 cents.

Paper Awards

Paper Corporation of U. S. has been awarded the contract for furnishing the Government Printing Office with 20,100 pounds of 75% rag, 24 x 38 laid antique book paper at 14.8 cents. Other awards announced include the following:

Mudge Paper Company will furnish 1,064 pounds of 35 x 45 golden rod book paper at 13.7 cents and the same firm will also furnish 960 pounds same 38 x 50 at the same price. Walker, Goulard Plehn Company will furnish 14,150 pounds of 75% rag, 23 x 36 white ledger paper at 21.2 cents and the same firm will furnish 16,000 pounds of the same 21 x 32½ same at the same price. Barton, Duer & Koch Paper Company will furnish 64,000 pounds of No. 1 quality hard rolled binders' board at 4.225 cents. Whitaker Paper Company will furnish 32,912 pounds of 44½ x 56½ Quaker drab cover paper at 10.69 cents. Bids for all of these items were received on September 26.

Barton, Duer & Koch Paper Company will furnish 200,000 sheets of 22 x 28, 8 ply white railroad board at $35.22 per M sheets, bids for which were received on September 24.

R. P. Andrews Paper Company will furnish 100,384 pounds of 34 x 44 white sulphite ledger paper at 8.24 cents, bids for which were received on September 22.

Eastern Corporation will furnish 200,000 pounds of white sulphite writing paper in 38 inch rolls at 7.04 cents and R. P. Andrews Paper Company will furnish 135,600 pounds of white sulphite index paper, 24½ x 32½ at 7.38 cents. Bradner Smith & Company will furnish 38,400 pounds of 20 x 25 robin's egg antique M.F. cover paper at 9.61 cents. R. P. Andrews Paper Company will furnish 20,000 sheets of 21 x 32, 100% rag, white bond paper at $26.43 per M sheets. Paper Corporation of U. S. will furnish 8,806 pounds of green and pink sulphite manifold paper in 24 inch rolls at 12 cents, 19,500 pounds of green sulphite same 21 x 32 at 13 cents, and 5,000 pounds of pink sulphite manifold paper 21 x 32 at 13 cents. Virginia Paper Company will furnish 41,600 pounds of 26½ x 41 light green coated cover paper at 12.5 cents. Bids for all of these items were received on September 19.

Eastern Corporation will furnish 44,400 pounds of 32½ x 42½ pink mimeograph paper at 8 cents, and Whiting Paper Company will furnish 40,750 pounds of 28 x 34, 25% rag, blue bond paper at 14.25 cents. Bids for these items were received on September 17.

Whiting Paper Company will furnish 70,200 pounds of 50% rag, 38 x 48 white ledger paper at 16.5 cents. R. P. Andrews Paper Company will furnish 161,700 pounds of 32 x 52 offset book paper at 8.3 cents. Whitaker Paper Company will furnish 6,833 pounds of 25% rag, 34 x 42 medium buff index at 14.55 cents. North American Pulp and Paper Company will furnish 61,198 pounds of 32 x 42 white sulphite manifold paper at 12.5 cents. Bids for these items were received on September 15.

U. S. Paper Purchase Expands Greatly

WASHINGTON, D. C., October 15, 1941 — Several million pounds more paper will be purchased by the Joint Congressional Committee on Printing for the use of the Government Printing Office for the six months' period beginning January 1 next than is being purchased under the present contracts which began July 1 last.

The Paper Specifications Committee of the Joint Committee has just completed its preliminary work with provision for a great deal more paper for the coming six months. It is understood that about a million more pounds of newsprint paper will be used; 2,000,000 more pounds of postal card paper; and a million and a half more pounds of offset paper. It is said that not many changes in specifications have been made to this time and few are expected. Question of chlorine shortage is being taken up by the committee but to this time nothing special has been done about it. However, the Specifications Committee will probably have another meeting before the specifications are made public.

A. G. Stone Continues as Manager

A. G. Stone, writes:—"In your October 8 issue, you stated that I had retired which is by no means true as I am still holding the same position as I have for the past six and one-half years, namely, general manager of Northern Mills of Southern Kraft Division of International Paper Company, with mills at Hartford City, Ind., York, Pa., and York Haven, Pa. where I still have my office, the only change being that my company has sold the Marinette, Wis., and Menominee, Mich., properties to Marinette Paper Company a wholly owned subsidiary of Scott Paper Company. Mr. Reed has been manager of the Marinette and Menominee Mills for the past one and one-half years and remains in his same position.

Pacific TAPPI Meets at Tacoma

The first dinner meeting of the 1941-42 season of the Pacific Section of TAPPI, was held on October 7th at the Winthrop Hotel, Tacoma, Wash. The other locations for TAPPI dinner metings will be as follows: November 4, Camas, Wash.; January 6, Longview, Wash.; February 3, Everett, Wash.; March 3, Portland, Ore.; April 7, Port Angeles, Wash.; May 5, Vancouver, B. C. (tentative).

The new officers elected in June were in charge of the meeting. Carl E. Braun, chairman of the Pacific Section, presided and was accompanied by Mr. E. P. Wood, vice-chairman, and Fred C. Shaneman, secretary-treasurer.

The first paper on the program, "Sulphur Dioxide Recovery from Sulphite Vomit Stacks," was presented by Donald G. Felthous, engineer on the staff of the Longview mill of the Pulp Division of the Weyerhaeuser Timber Company. This paper entered in the Shibley award contest covered a general review of means of sulphur dioxide recovery and in particular the work done at the Weyerhaeuser Timber Company Longview mill. Operations over yearly periods show a recovery of approximately thirty pounds of sulphur per ton of pulp and the elimination of obnoxious fumes and subsequent corrosion about the pulp plant.

The second speaker was Axel Edwall, Fellow, The American-Scandinavian Foundation, Billerud Company, Ltd., Saffle, Sweden. He told an interesting story of his trip from Stockholm by plane to Moscow and his trip on the Trans-Siberian Railroad and thence through Manchuria and Korea. He spent three weeks in Japan and proceeded to San Francisco and has been on the Pacific Coast for about three months.

Thereafter a sound moving picture entitled "Rayon —A New Frontier of Progress," was shown by the American Viscose Corporation. Niles M. Anderson, chairman of the Pacific Coast Division of the American Pulp and Paper Mill Superintendents Association, announced that their fall meeting would commence on the afternoon of December 5 at the New Washington Hotel in Seattle, Wash.

O. C. Abott, Tore Ahlen, Jerry Alcorn, Leslie L. Anderson, Niles M. Anderson, Fred Armbruster, A. Bailey, Walter R. Baumann, C. B. Baxter, Henry E. Becker, George H. Beisse, H. K. Benson, W. L. Beuschlein, Harold W. Bialkowsky, A. L. Bibbins, J. R. Blair, Carl E. Braun, A. M. Buck, A. M. Cadigan, G. H. Cady, Claude Callaghan, John M. Carlson, R. E. Chase, Sidney M. Collier, N. W. Coster, J. J. Davis, J. Bayard DesCamp, P. T. Dickie, Neil Duffie, George E. Durkee, Axel Ekwall, E. O. Ericsson, Donald Ervin, Donald G. Felthous, N. O. Galteland, Irving R. Gard, B. R. Gardner, A. S. Gerry, Wm. R. Gibson, Robert Goettling, Alfred Graef, Harold G. Griep, A. Gustin, R. N. Hammond, L. G. Harris, R. S. Hatch, Andrew D. Hawley, J. G. Hoffman, Jr., Don J. Holt, Geo. A. Holt, A. H. Hooker, Jr., H. A. Houff, J. W. Ingersol, Lester M. Johnson, Meder Johnson, B. L. Kerns, C. R. Koch, Robert M. Kuhn, Harold Lange, R. E. LeRiche, J. R. Lewis, Henry Loren, A. H. Lundberg, D. K. MacBain, Joseph L. McCarhy, S. H. McGregor, Murl Miller, T. E. Moffitt, T. H. Moran, O. P. Morgan, Fred Nicholson, F. A. Olmsted, G. V. Palmrose, Frederic M. Pape, William Pittam, Frank A. Purdy, Carl A. Ramsad, Archie P. Ratliff, Jr., E. D. Rich, H. H. Richmond, Oliver E. Ronken, Don Ross, Grant D. Ross, James Ruck, Walter A. Salmonson, Otto H. Sangder, Harlan Scott, Russell H. Scott, F. C. Shaneman, Wm. Sedlacek, Brian Shera, C. Sholdebrand, L. E. Stevenson, Allan Strang, J. B. Symonds, H. V. Tartar, V. L. Tipka, Preston Varney, G. R. Vernig, R. O. Vognild, J. B. Ward, Harold F. Warren, Jack Wilcox, E. W. Williamson, K. E. Willmer, Edward P. Wood, L. R. Wood, and E. H. Woodruff.

N. E. TAPPI Meets at Pittsfield

The New England Section of TAPPI opened its season Saturday, October 4, at the Pittsfield Country Club, Pittsfield, Mass. It was an ideal fall day and the golf tournament was enjoyed by over sixty players in the afternoon.

The New England TAPPI Cup was won for the third time by Fred W. Schneider for low gross score. The Cup, therefore, becomes the permanent possession of Mr. Schneider. However, Brad West has offered another New England TAPPI Cup which will be played for next year at the annual golf tournament. The Superintendent's Cup, donated by B. F. Perkins Company, Holyoke, was won this year by James Hager of the Crane Company, Dalton.

An innovation on awarding prizes was used this year and every net third score won three golf balls. After the dinner Arthur Crane, Crane and Company, Dalton, gave a very interesting and enjoyable talk on Time Studies and Work Simplification. Mr. Crane showed how time study of various operations in a paper mill resulted not only in better production by cutting down time but also in superior products. He illustrated the talk with a movie film showing operations before and after simplified improvements.

The success of the opening meeting was due to the splendid work of Tommy Tucker, Crane and Company, Dalton, who arranged and planned this meeting. The next meeting of the New England section of TAPPI will be held at the Roger Smith Hotel, November 14, in Holyoke.

The following were present:

P. W. Ayers, A. F. Bailey, P. S. Bolton, Wm. L. Brodeur, A. M. Brooks, S. A. Brunnell, Wm. Burke, Mrs. Coachman, Mrs. J. F. Carey, A. E. Crane, J. F. Carey, Fred Cassidy, John F. Carroll, G. S. Carroll, Mrs. G. S. Carroll, Ralph Carter, Ruth Carter, A. F. Cosby, Mrs. A. F. Cosby, A. H. Curran, C. W. Damon, Mrs. C. W. Damon, C. C. Decker, J. K. Donohue, R. H. Doughty, Mildred Doughty, Harry Duston, Howard Ferguson, W. L. Foote, Paul B. Fowler, Helen Fowler, Wm. J. Glendon, J. W. Hogan, O. F. Hutchinson, Mrs. O. F. Hutchinson, Irving D. Hughes, Jr., J. J. Healy, Jr., C. L. Horton, Mrs. C. L. Horton, P. B. Holden, E. P. Jones, Mrs. E. P. Jones, Miss H. U. Kiely, M. C. King, Werner Kaufmann, Engelbert Krichels, Arthur P. Kraus, F. T. Kelly, H. M. Keating, H. L. Mellen, Wm. Murray, Robt. Mannheim, Eunice Mannheim, C. D. Muzzy, James W. Merrill, John M. McGarry, C. H. Manning, Benj. J. Mayo, Jr., Frank Moore, R. D. McCarron, F. J. Nelson, Fred Neumann, R. J. Proctor, Wm. F. Powers, J. P. Phelps, W. W. Putnam, H. N. Philley, E. O. Reed, W. G. Russell, L. E. Richards, E. A. Richardson, T. L. Stirling, R. T. Sammet, Fred Schneider, Mrs. F. Schneider, Tommy Tucker, Ruth Tucker, J. J. Thomas, B. E. Teale, W. B. West, T. H. Williams and Harry L. Weshter

Charge Crepe Paper Men Fix Prices

Eight manufacturers of crepe paper and an unincorporated trade association, whose membership is composed of six of the respondent corporations, and its manager, are charged in a complaint issued by the Federal Trade Commission with entering into a conspiracy and combination to hinder and prevent price competition in the sale of crepe paper.

The respondents are: National Crepe Paper Association of America, Lincoln-Liberty Bldg., Philadelphia; George J. Lincoln, Jr., as secretary and manager of the respondent association; American Tissue Mills, Holyoke, Mass.; Charles T. Bainbridge's Sons, Brooklyn; Fort Howard Paper Company, Green Bay, Wis.; The Papyrus Company, Kenilworth, N. J.; C. A. Reed Company, Williamsport, Pa.; The Tuttle Press Company, Appleton, Wis.; Dennison Manufacturing Company, Framingham, Mass.; and the Reyburn Manufacturing Company, Philadelphia. All of the respondents, with the exception of the Dennison and Reyburn corporations, compose the National Crepe Paper Association of America.

The respondent association and the respondent Lincoln are not engaged in commerce but, according to the complaint, have aided, abetted and cooperated with the other respondents in the acts and practices alleged in the complaint. Pursuant to this combination and agreement, the complaint continues, the respondents have: (1) Fixed and maintained uniform delivered prices at which crepe paper is to be sold; (2) Established and maintained geographical zones of identical delivered prices, zone boundaries, and price differentials between such zones; (3) Arbitrarily computed or averaged delivery costs and freight allowances within each delivered price zone from some common shipping point or points to all delivery points therein, in order to prevent differences in delivery cost from the various plants of the respondent manufacturers to their customers from creating any differences in delivered prices.

Respondent manufacturers also are alleged to have agreed to file their lists of delivered prices with the respondent association and agreed that they would not change or deviate from such prices until new and different prices were so filed by them; fixed and maintained uniform discounts and adopted and maintained standard and uniform colors, sizes and ratios in order to facilitate and maintain identity of prices; and used other means and methods designed to suppress and prevent price competition and to accomplish uniformity of delivered prices of their products.

The complaint declares that as an incidental but necessary result of the collusive acts and practices of the respondent manufacturers, they deprived their nearby customers of the natural advantage which they would otherwise have in delivered prices by comparison with more distant customers, and the respective respondent manufacturers thereby demanded, accepted and received different sums of money per unit of product from their respective customers and required their nearby customers to pay larger sums per unit than their more distant customers, after allowing for difference in cost of delivery. This difference of treatment of their customers, the complaint continues, was for the purpose and with the effect of maintaining identity of delivered prices among the respondent manufacturers.

The acts and practices alleged in the complaint are declared to have the effect of unduly and unlawfully restricting and preventing price competition in the sale of crepe paper and of placing in respondent manufacturers the power to control and enhance prices.

Twenty days are allowed the respondents for filing answer to the complaint.

DEFENSE NEEDS 30 PER CENT

(Continued from page 9)

vast resources of American industry, American ingenuity, American efficiency, are mobilized.

"By mobilizing American labor and management to meet the problem of defense, jobs can be saved until they are needed for defense. Proprietorships can be adjusted sufficiently to the stringency of a war-time economy. When this war is over, the post war must be fought. We must have an industrial structure capable of meeting the problems of the difficult peace to follow.

Government Expects All to Cooperate

"Government expects industry to voluntarily, patriotically, enthusiastically, meet the challenge of defense. The strength of a democracy is the total of the free efforts of free men fighting the cause of freedom. We must, in this war, and in the post war, be sure to preserve for ourselves and our posterity the free institutions in the defense of which we are so arduously engaged.

"In this crisis, high-minded labor leadership and high-minded industrial management must build enduringly a philosophy of self-sacrifice and must work out and establish a technique based on freedom of enterprise, autonomy of labor and management, and the sanctity of the American way which shall meet every defense, economic and social need.

"When a community is successfully at war as is Germany, increasing numbers of men and women must be diverted from normal pursuits to work in defense industries. In a successful war-time economy, transportation is in the same position as labor. It can be spared in decreasing volume for non-essential needs. In Germany, with adequate potential supplies of newsprint and of pulp and paper, shortages have derived from these collateral factors. We can't foresee all the problems of the future, but we do know that American industry can solve them all patriotically and efficiently."

Clayton W. Sherman Dead

Clayton W. Sherman, president of Seaman Paper Company, passed away Thursday, October 9, after a brief illness. He was 67 years of age. Services were held at the home, 1001 Sheridan Road, Evanston at 2:00 P.M. Saturday, October 11.

Mr. Sherman is survived by his widow, Georgie Carr Sherman, a daughter Mrs. W. V. Carroll, Jr. of Winnetka, Ill., and a son, Clayton Carr Sherman. Mr. Sherman was also Treasurer of H. P. Smith Paper Company of Chicago.

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LESS ATTENTION WITH SUPERLA

● Do you have grease cups and fittings in your plant that are hard to reach? Or others that must be serviced while in motion? Frequently the time and trouble required to lubricate these parts is of greater importance than grease cost. On the Corliss engine pictured here, Superla grease *cut both grease cost* and *lubricating time.*

The grease which had been used in the valve mechanism on this Corliss could not stand the high temperatures, and leaked excessively. Cups had to be turned down frequently. Unsightly piles of grease on the floor had to be cleaned up—a sure sign of excessive consumption. When the right grade of Superla Grease, recommended by the Standard Oil Engineer, was applied, high temperatures were no longer a problem—excessive leakage was entirely eliminated.

Why put up with even minor lubricating troubles when it is so easy to get a Standard Oil Engineer's help? Just call the local Standard Oil (Indiana) office or write 910 South Michigan Ave., Chicago, Illinois, for the engineer nearest you.

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Pulp Price Investigation Continues

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., Oct. 15, 1941—Further investigation of the factors behind the recent increases in contract pulp prices announced by three leading producers is being undertaken by the Office of Price Administration and the outcome of this investigation will determine whether or not a schedule of maximum prices should be imposed, Leon Henderson, administrator, announced today.

At a meeting with pulp producers on October 10, agreements were obtained with all but three companies not to exceed over the remainder of 1941 the prices that generally prevailed during the third quarter. West Virginia Pulp & Paper Co., which previously had proposed to raise the price of soda pulp by $4.00 a ton, withdrew the increase and joined with the other manufacturers in the voluntary stabilization plan.

Container Corporation of America, St. Regis Kraft Company and Eastern Corporation, which also had announced higher prices, agreed to submit detailed data to justify their action at a series of individual conferences. Upon completion of these conferences and study of the data thus acquired, the Office of Price Administration will arrive at a decision as to whether a formal schedule of ceiling prices is necessary.

The leading grades of pulp covered by the voluntary agreements and the maximum fourth quarter prices follow: Bleached sulphite, bond and book, $72.50 a ton ex dock Atlantic seaboard; prime unbleached sulphite, $63.50 a ton, ex dock Atlantic seaboard; soda pulp, $66.00 a ton delivered; bleached Southern and bleached Northern kraft, $82.50 a ton, ex dock Atlantic seaboard; and ground wood, $40.00 a ton delivered. These are representative of contract prices charged during the third quarter.

In the case of unbleached Northern and Southern kraft, each producer agreed not to exceed contract prices for the September quarter. In respect to all other grades of pulp, the differentials that prevailed during the third quarter will be retained throughout the remainder of 1941. Export prices, acccording to the understandings, will not exceed those charged during the September period.

Unless it becomes necessary to issue a formal schedule of maximum prices beforehand, OPA plans to call a meeting of pulp producers in December to discuss the price situation in the light of the information that will then be available as a result of the Federal Tariff Commission's pulp industry investigation now under way.

Egypt Requests Paper Bids

Department of Survey and Mines, Ministry of Finance of the Egyptian government, has issued a tender for the supply of printing paper required for 1941-1942. Bids will be received by the Controller General, Survey of Egypt at Giza, up to November 22.

Local representation is required and a list of firms prepared to act as temporary agents for United States suppliers may be obtained, together with particulars for the articles required and samples, on application to the Regional or District offices of the Bureau of Foreign and Domestic Commerce, Department of Commerce, located in the principal cities.

R. S. Kellogg Speaks at Amherst

AMHERST, Mass., October 16—"Our basic freedoms in this country anchored in the first amendment to the Constitution of the United States are free religion, free assembly, free speech and free press," said R. S. Kellogg, secretary of the News Print Service Bureau, New York City, speaking today at the weekly convocation of the Massachusetts State College.

"No one born and bred in this atmosphere and under these traditions can conceive of a worthwhile existence without them. It has been aptly said by a well-known editor that the keystone of the arch of freedom in a democracy is a free press. Another well-known editor rightly maintains that the most important function of a newspaper in a democracy is to furnish that check upon government which no Constitution has ever been able to provide.

"With 2,000 independent daily newspapers in the United States and several times that number of weeklies, every family in the United States can have its newspaper every day. But," said Mr. Kellogg, "a free press cannot be effective among a population of one hundred thirty million people without a cheap and abundant supply of paper. Such a supply was not available until within the memory of men still living the science and art of making paper from wood was developed. The application of power and invention to making paper and printing newspapers have run simultaneously parallel courses. All the paper in the world was made from rags and by hand until early in 1800. The first paper-making machine was started in the United States in 1827 and soon thereafter the cylinder press supplanted the hand press in printing newspapers. The continuous printing rotary press using paper in rolls and making high speed printing possible came in 1871, followed by the linotype in 1886. Now a single mammoth press prints millions of newspapers in an hour compared with 300 pages on the hand press a little more than 100 years ago. Correspondingly one ton of paper was made on a machine in a day in 1840, and now there are machines which make as high as 200 tons of news print paper in a day.

"Progress and improvement in paper-making and in printing have been interrelated throughout, giving us the newspaper of today, which is a wonderful accomplishment in speed and mechanical production and of equal speed and coordination in putting upon our breakfast table news from all over the world up to the preceding midnight.

"We must never forget the function of a free press in a land of free men. A gathering like this today would not be tolerated in a world ruled by Hitler, Stalin or Mussolini. The function of newspapers was never better stated than by Thomas Jefferson who said in 1787:

" 'The basis of our governments being the opinion of the people, the very first object should be to keep that right; and were it left to me to decide, whether we should have a government without newspapers, or newspapers without a government, I should not hesitate a moment to prefer the latter. But I should mean, that every man should receive those papers, and be capable of reading them.'

"And there is no more important function for a college than to make certain that its students understand what they read," said Mr. Kellogg in conclusion.

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending October 15, 1941

	High	Low	Last
A. P. W.	1¾	1⅝	1¾
Armstrong Cork Co.	29	28¾	28¾
Celotex Corp.	8⅝	8⅜	8⅜
Celotex Corp., pf.	71	68½	69
Certain-Teed Products Corp.	3⅛	3	3
Certain-Teed Products Corp., pf.	30⅞	29	29
Champion Paper & Fibre Co.	22	22	22
Champion Paper & Fibre Co., pf.	107½	106½	106½
Congoleum-Nairn Co.	17⅜	17⅛	17⅛
Container Corp. of America	14½	13¾	13¾
Continental Diamond Fibre Co.	9⅜	9	9¼
Crown-Zellerbach Co.	13½	13	13
Crown-Zellerbach Co., pf.	92½	91	91½
Flintkote Co.	13½	13	13
Robert Gair	2⅜	2¼	2¼
Robert Gair, pf.	10⅜	10	10
International Paper & Power	18⅜	17	17⅜
International Paper & Power, pf.	70¾	67	68¼
Johns-Manville Corp.	64¼	62⅛	62⅛
Johns-Manville Corp., pf.	123½	123½	123½
Kimberly Clark Corp.	30	30	30
MacAndrews & Forbes	28	26¼	26¼
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	27	25⅝	26¼
Mead Corp.	8	7½	7⅞
Mead Corp., pf.	77¼	76¾	76¾
Paraffine Companies, Inc.	30	30	30
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	13¼	12⅞	13¼
Rayonier, Inc., pf.	27½	27¼	27¼
Ruberoid Co.	18⅞	18	18¾
Scott Paper Co.	38¼	38	38
Scott Paper Co., pf.	....	....	....
Sutherland Paper Co.	19⅝	19¼	19⅝
Union Bag & Paper Corp.	10⅜	10	10⅛
United Paperboard Co.	4	3¾	3⅞
U. S. Gypsum Co.	56¼	53¼	53¼
U. S. Gypsum Co., pf.	....	....	....
West Virginia Pulp & Paper Co.	18	18	18

New York Curb Exchange

High, Low and Last for Week Ending October 15, 1941

	High	Low	Last
American Box Board Co.	5	5	5
Brown Co., pf.	23	20½	22⅝
Great Northern Paper	38	38	38
Hummel-Ross Fibre Corp.	....	....	....
National Container Corp.	10⅜	10⅛	10½
St. Regis Paper Co.	2¼	1⅞	2¼
St. Regis Paper Co., pf.	108½	108	108
Taggart Corp.	2⅞	2¾	2¾

Challenge Right to Prevent Sale

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., October 14, 1941—Legal machinery has once again been put into motion concerning the tangled affairs of the great Abitibi Power and Paper Company, Ltd. This week the Ontario government passed an Order-in-Council providing for a proclamation bringing into force at once the Abitibi Power and Paper Company, Ltd., Moratorium Act, which was assented to on April 9, 1941, and which gives power to the government to stay proceedings to be taken under an order made in the Supreme Court of Ontario by Mr. Justice Middleton on June 10, 1940, directing the sale of all assets under a mortgage made by the company, until December, 1942. On Thursday of this week Attorney-General Conant was served with notice of motion on behalf of the Montreal Trust Company for an order that all property and assets of the company, in the hands of G. T. Clarkson, receiver and general manager, be sold without reserve bid. This move by the trustees is made to challenge the validity of the moratorium legislation on behalf of the bondholders' protective committee.

The motion will be heard Oct. 18 at 10 A.M. at Osgoode Hall, Toronto, before Mr. Justice Middleton. The same motion was before the court November 29, 1940, and was adjourned sine die to be brought on by either party at one week's notice. Mr. Conant and C. R. Magone will represent the Ontario government.

Explaining the government's position, Mr. Conant said it follows the recommendation of the Royal Commission which investigated the affairs of the Abitibi Company a year ago that an opportunity be given to all parties concerned to consider the commission's plan and because of the commission's finding that the shareholders may have a substantial equity in the property if the present rate of earnings is maintained.

I. P. Declares $5.00 Dividend

The board of directors of the new International Paper Company today declared a dividend of $5.00 a share on account of accumulated unpaid dividends accrued on the company's outstanding cumulative convertible 5% preferred stock, payable November 15, 1941, to holders of record at the close of business November 7, 1941. This payment will eliminate all arrears of unpaid dividends.

Checks for this dividend on preferred stock of the new International Paper Company can be mailed only to holders of record of such new International Paper Company stock. Dividends payable on shares of new preferred stock awaiting delivery to holders of unexchanged International Paper and Power Company stock certificates, will be retained in a special account and will be paid when such certificates are exchanged.

Masonite Corp. Reports $2,010,886

The Masonite Corporation reports for the fiscal year ended August 31 net income of $2,010,886 after all charges, equivalent to $3.56 a common share. This compares with net income of $1,659,348, or $2.91 a common share, for the previous fiscal year.

Net sales for the year ended August 31, 1941, amounted to $12,932,976, compared with $9,057,647 for the previous year, an increase of nearly 43%.

Brown Co. Plan Approved

PORTLAND, Me., October 11, 1941—Federal Judge John A. Peters has signed an order approving the reorganization plan of the Brown Company. It is described as the last court action necessary. Attorneys close to the company's affairs said yesterday that it was probable the reorganization plan would be declared effective December 1.

Central Paper Nets $2.93

The Central Paper Company for the year ended June 30, reports a net income of $553,223, equal, after preferred dividends, to $2.93 each on 184,701 shares of common stock, against $442,637, or $2.88 on 145,578 common shares, in preceding year; net sales, $4,157,945, against $3,048,531.

Offer Keyes Fibre Bonds

Public offering of a $1,400,000 issue of Keyes Fibre Company 4½% first mortgage sinking fund bonds is being made by Coffin & Burr, Inc., at 99½.

PAPER
TRADE JOURNAL
This Reg. U. S. Pat. Off.
Henry J. Berger
EDITOR

Vol. 113 October 16, 1941 No. 16

COMING EVENTS IN PAPER INDUSTRY

New England Section. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

Delaware Valley Section. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

Lake States Section. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

Kalamazoo Valley Section. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

THE JOB AHEAD

It may appear a little early to begin the serious consideration of many postwar problems. It does not seem too soon, however, to begin to give some thought to the broad utilization of the products of industry. National strength and security are to a considerable extent dependent upon how well a balance is kept between military and civilian needs. It seems obvious that the American system of free enterprise must be kept in operation and not restricted more than is absolutely necessary to achieve the maximum defense production required. The Administration is, of course, in the preeminent position and through its policies must be directly responsible for setting up and carrying out an economy which will build up both defense and civilian strength. Both are vital. It is because the national policy in effect today will profoundly affect the welfare of the country in the future, that the problems of the coming postwar period are attracting more and more attention.

In discussing an important phase of this subject, the *News* from the Pabco Press of The Paraffine Companies, declares that industry must be free to plan for the future. "The nation's industries must cast a horoscope for the future, if the United States is to avert an industrial depression of unemployment and low wages," according to W. H. Lowe, president. "A slump in industrial production is inevitable unless we observe a few fundamental principles of industrial initiative and free enterprise in planning to compensate for the slack which will come when the defense boom ends. Only through industry and labor's mutual accord can this be accomplished. . . What role will the government play to aid the unemployment situation when the vast buying program is over? The government can do very little. It can, however, allow industry the freedom to plan a careful program of investment and expansion in relatively undeveloped fields of manufacture. Then it can aid in the re-allocation of workers from defense jobs to employment in private enterprises."

In suggesting how this might be done, Mr. Lowe points out that, "An example of what industry plans for the future is indicated by The Paraffine Companies in making a concerted effort to stabilize and extend its industrial prosperity into the succeeding years by carrying out a program in broad outline as follows: (1) Money is being invested in surveys of the entire manufacturing world to find new products suitable to Pabco manufacture. Methods of improving present lines still further and the supplying of new materials to replace those needed for defense, are questions being carefully considered. (2) Research men are working on the problem of converting numerous waste products into useful manufactured articles to be put on the market after the war is over when defense production has stopped. (3) Advertising, merchandising and public wants are being studied to ascertain trends in the future buying demand. The public will be a fickle buyer with its increasingly heavy tax burden. Therefore, products must be better than ever and lower in price. Industry wants to outline its course for the years to come and is willing to risk big investments to keep operating. To do this, however, it must have the freedom to carry out its program without governmental interference. On this simple freedom of enterprise may rest the fate of America as the greatest industrial nation the world has ever known."

In discussing "the dynamics of national strength and security" in one of the editorial booklets published by Farrel-Birmingham Company, the balance that is essential to keep between the production of military goods and goods for civilian needs was pointed out as follows: "It is currently computed that the Axis powers are taking nearly two-thirds of the national incomes of their respective countries for the prosecution of the war. That, in simplest terms, must mean that upwards of two-thirds of the man-hours of productive effort are being devoted to war effort. It must also mean a significant diversion of effort from the two major objectives of any nation which would maintain growth and progress, i.e., from (a) the production of food, shelter and comfort for its population and (b) the construction of the tools of production. Are there any important deductions to be made from the situation which may aid us in coping simultaneously with the problems of national defense and unemployment? We think so. Reflection on the matter suggests that we need to visualize more clearly the process of allocating resources to the needs of the hour if we would fully exploit the opportunity as well as surmount the obstacles before us. Thus, a man works say fifteen hundred or two thousand hours a year. At a low level of productivity that labor may

barely suffice to feed and shelter him and his family. At a slightly higher level of productivity the same man-hours of work will provide subsistence and certain comforts and luxuries. At a still higher level of productivity the same man-hours will permit also the construction of tools with which later on even more may be produced. It is at this stage that progress begins; time unneeded for bare subsistence becomes available for leisure and for the building of the tools of production that in time provide even more time for expanding the means of production. The upward spiral then sustains itself."

The article continues: "This is significant. It is significant because the Axis powers have missed the point. It is significant to us because we should not miss the point and fall into the same error. Preparation and prosecution of war, as carried out by the dictatorships, lacks much of being socially scientific. For they have diverted the man-hours of labor not required for bare subsistence, not to the construction of the tools of useful production but to the building of military equipment and the making of munitions. There is little or no labor left over or saved for expanding and improving the tools of useful production. Thus they miss the point which is the essence of national and individual progress. Their peoples in this generation and perhaps the next, are already condemned to social and economic stagnation. That is not a scientific procedure, even in the conduct of war, for war itself cannot long be conducted unless a certain proportion of national labor is reserved for maintaining, expanding and improving the tools of production."

To Set Building Paper Prices

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 15, 1941—Ceiling prices below current levels are being prepared for asphalt roofing products and building paper, Leon Henderson, administrator, Office of Price Administration, announced today.

At the same time the administrator disclosed that maximum prices also will be established for old rags, a basic raw material in the manufacture of roofing and other important industrial products.

Representatives of 40 manufacturers of asphalt roofing and shingles have been invited to meet with OPA tomorrow (October 15) to discuss the proposed schedule. On the following day (October 16), brokers and dealers in old rags will attend a meeting in Washington to discuss the forthcoming schedule for that commodity.

Asphalt roofing products have risen in price about 20% thus far in the current year by a succession of four increases. The industry has been operating at the highest rate in its history and in the first seven months of 1941 broke all production records for any similar period.

Prices of old rags have gone up about $15 a ton in the past three months and currently range from $36 to $40 a ton, or double the average for the past 10 years.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks, 1941		Corresponding Weeks, 1940	
August 30	102.1	August 31	83.4
Sept. 6 (Holiday Week)	86.1	September 7	69.3
September 13	104.0	September 14	85.2
September 20	103.8	September 21	85.0
September 27	105.2	September 28	86.7
October 4 (Prelim.)	*106.7*	October 5	85.4

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1940	89.1	84.7	82.3	84.3	90.0	92.1	85.3
1941	85.6	89.7	92.2	96.4	98.9	99.5	94.8

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1940	85.1	81.5	85.5	84.9	80.9	85.6
1941	101.8	*99.7*	...	...	...	...

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941
Year to Date	68.9	78.5	85.7	69.9	80.1	86.2	*95.3*
Year Average	69.9	80.4	79.8	71.5	83.4	85.6	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	62	67	67	70	69	70	69	75	78	82	80	74	72
1937	80	86	86	88	85	77	66	74	69	65	55	45	73
1938	54	60	61	57	58	56	57	66	66	70	65	59	61
1939	60	67	71	69	64	67	63	72	74	84	81	71	70
1940	71	70	69	70	76	79	72	74	72	79	77	71	73
1941	75	81	82	83	84	88	86	94	94	..	..	..	..

Week ending Aug. 30, 1941—97
Week ending Sept. 6, 1941—80
Week ending Sept. 13, 1941—98
Week ending Sept. 20, 1941— 99
Week ending Sept. 27, 1941— 98
Week ending Oct. 4, 1941—*100*

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

Explains Waste Paper Schedule

[FROM OUR REGULAR CORRESPONDENT]

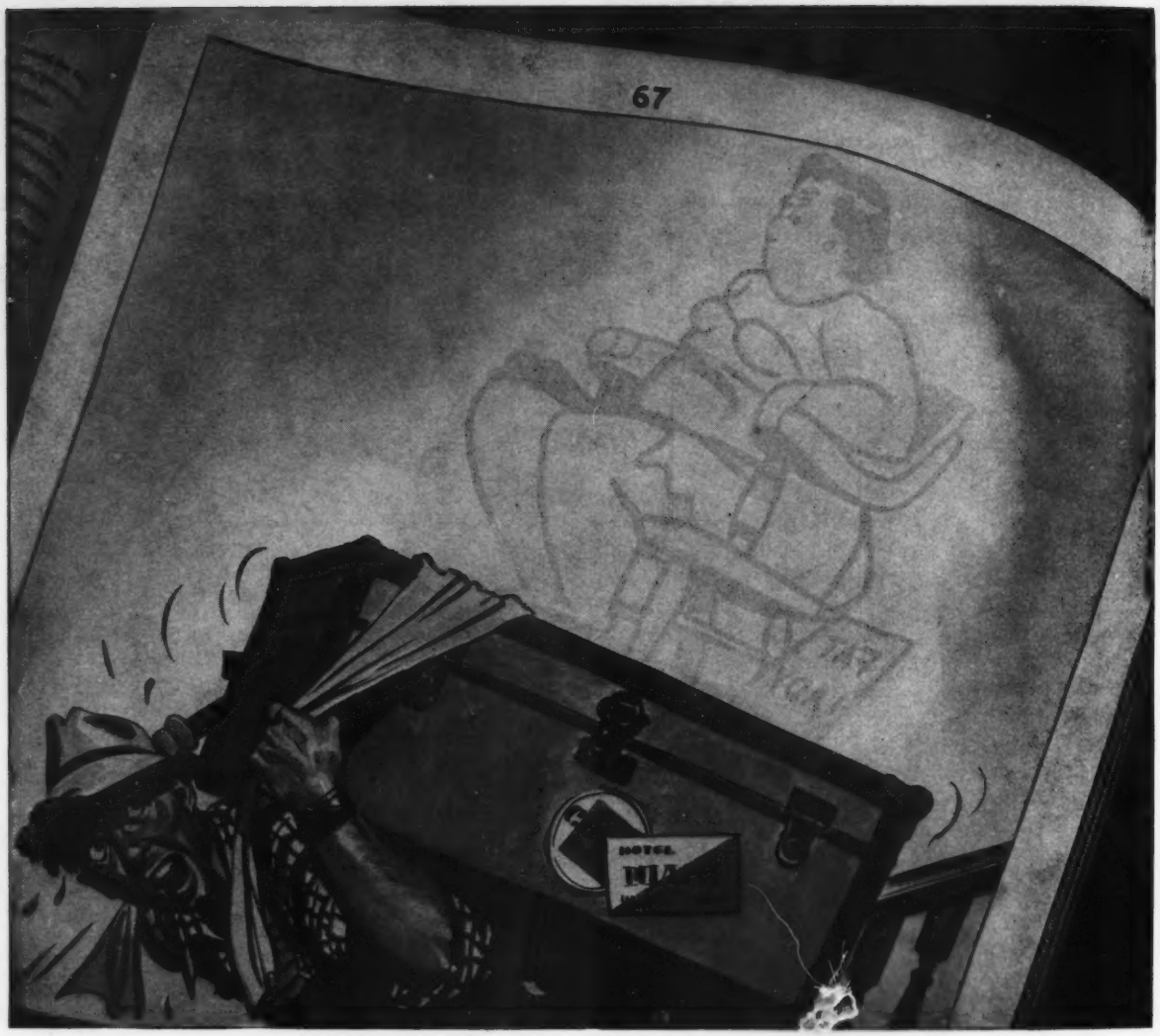
WASHINGTON, D. C., October 16, 1941—Wastepaper dealers who make deliveries to consuming mills in their own trucks and charge more than established common carrier rates are violating the wastepaper price schedule, Leon Henderson, Administrator, Office of Price Administration, stated today.

The schedule establishes maximum prices that may be charged at the point of shipment and provides that only proper transportation charges may be added. Proper charges, the administrator said, are the lowest for the type of carrier used. Therefore, shipments by dealers in their own trucks must be billed at not more than the published common or contract carrier rates.

Mr. Henderson also pointed out that householders, office buildings and other primary sources of wastepaper cannot collect the ceiling prices. This also applies to the small collectors and dealers who dispose of their material to large dealers and packers. These intermediate sales must be made below the established maximums in order that final sales to consumers may be made at ceiling levels.

The administrator explained that the maximum prices are those which may be charged only at the final point of shipment to consuming mills. They reflect the costs of services performed by large dealers and packers in sorting, grading, baling and loading quantity lots.

Attempts to collect the top prices for small lots can only act to disturb the normal channels of trade and interfere with the flow of wastepaper to the mills, Mr. Henderson said.



"You ain't helpin' any, sister!"

. . . GROANED THE TRUNK MOVER ON PAGE 67 TO THE FAT LADY ON PAGE 68

"Heavens!" exclaimed the fat lady, peering over her chins. "This is the first time I've ever performed on a trunk!"

"...on a *grease-spot*, you mean!" moaned the trunk mover. "I c-can't hold out much longer!"

"You *poor* man!" clucked the fat lady. "I'd like to make things easier for you. But I'm *show-through* from the next page. Only the paper manufacturer can get rid of me!"

"What can *he* do?" wheezed the mover.

"He can use Krebs Pigments," explained the fat lady. "They make the thinnest paper opaque!"

"Will they help me hold you up?"

"Land sakes, yes!" smiled the fat lady. "Krebs pigments hold printing where it belongs . . . on *one* side of the paper! And the print stands out sharply, because the paper is *cleaner* and *whiter*!"

"I don't care about that," panted the mover. "I need some assistance!"

"And you'll get it . . . if you bring your technical pigment problems to Krebs!"

"H-hurry," gasped the mover, his legs beginning to buckle. "Tell me where to go . . ."

"To the nearest mailbox," pointed out the fat lady. "Just send them a letter!"

KREBS PIGMENT & COLOR CORP.

1007 Orange Street...Wilmington, Delaware

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Microflora of Felts and Slimes*

By Olga A. Smith[1]

Abstract

An extensive investigation has been carried out on the microflora of felts and slimes, with a preliminary study of the organisms which are found in paper and paperboard. Thirty-nine species of organisms have been isolated from mill felts, practically all of these being reported for the first time. Almost half of these actively attack felts. Several species, apparently common in felts, are capable, under laboratory conditions, of critically impairing felts in a period of a few days. In all tests made, organisms which liquefy gelatin will attack felt. Thirty-three species of organisms have been isolated from slime and white water; these include a single yeast, all the others being bacteria. Only three of these have been previously reported. About half of those found in slime were isolated also from felts. Most of the organisms isolated from felts, slime, white water and boards are forms which are widely distributed in a variety of habitats and have no direct sanitary significance to the human organism.

The microflora of the papermill and its products may, at times, be of very considerable interest to the papermaker. The problems connected with the formation of slime, sometimes critical under certain conditions, are almost exclusively traceable to the action of bacteria and related organisms. The maker of paperboards may be vitally concerned about the question of whether viable organisms are incorporated in the materials of the containers, and if so, whether these organisms are harmless or deleterious, or perhaps even definitely injurious. The user of machine felts would like to know precisely to what extent the deterioration of felts is due to bacterial action and what preventive measures, if any, might be undertaken which would give promise of reducing materially the rate of replacement. Any studies designed to furnish a basis for solutions of the problems just referred to must, in the very nature of the case, be bacteriological. If such studies are to be prosecuted with full hope of success, it is highly desirable, in many cases perhaps imperative, that the organisms involved be definitely known—that is, accurately identified.

In spite of the fact that most of the bacterial problems of papermaking are of long standing, published material would indicate that relatively few of them have been extensively investigated and, of the studies made, only a few have dealt at all with the identity of the organisms concerned. The only papers we have been able to find are those by McInnes *(1)* and of Mendrzyk *(2)* dealing with wool and felts, Schmelkes, Romans, and Martin *(3)*, Beckwith *(4)*, Nason and Shumard *(5)*, and Fritz *(6)* on slime, and Sanborn (7) on the organisms producing slime formation. Each of these studies will be referred to in its appropriate connection.

The investigations here reported were begun in 1934 and cover studies of almost two hundred separate cultures which were originally isolated from samples of deteriorated felts, slime, water, paper, and white water. In the course of the studies an attempt was made to determine the various species of organisms represented in the cultures.

The samples were obtained from mills widely scattered in the United States. As each was received, inoculations were made from it into nutrient media of several types, and as the organisms developed into colonies transfers from each different colony were made to fresh media. Careful checking of colony characters had to be undertaken at this point to determine the purity of each culture, because the first effort had to be directed toward obtaining pure or unmixed growths. Necessarily this checking had to be continued as the study progressed. In determining the physiological characters of the various organisms, at least three successive cultures were grown or developed on many kinds of media, and in the case where the culture showed any variability, the number of transfers ran to six or seven. Early in the course of the work it was possible to determine that some of the cultures were duplicates containing the same organism, and as these duplicates appeared, they were eliminated.

Felts

The first isolations were made from a sample of deteriorated felt and over forty seemingly different cultures were developed from this. Each was in turn sown on a test strip of new felt under sterile conditions. On the theory (which we were later unable to substantiate) that the rate of darkening of the felt was a direct measure of its rate of deterioration, seven of the test strips showing the most extreme discoloration were selected for further study of the organisms involved.

As indicated above, few studies of organisms having a deteriorating effect on felts have been made. As early as 1922 McInnes *(1)* reported on what was known at the time as "wool mildew," and reached the

* Presented at the Fall Meeting of the Technical Association of the Pulp and Paper Industry, Ann Arbor, Michigan, September 16-19, 1941.
[1] Research Assistant, The Institute of Paper Chemistry, Appleton, Wisconsin.

conclusion that damage to the wool fibers was caused by a rod-like organism which proved to be *Bacillus mesentericus*. In 1938, Mendrzyk *(2)* named *Bacillus subtilis*, one of the most common and widely distributed of the rod bacteria, as chiefly responsible for the damage to mill felts by bacteria.

In our laboratory, the organisms isolated from felts included seventeen species of rod bacteria which are capable of forming spores and are therefore highly resistant to heat and other factors, sixteen species of rods which do not form spores and are less resistant, four species of spheres, and one Actinomyces, an organism possessing characters of both the bacteria and the molds. Table I gives a list of the species that have been isolated. It may be stated that, of the forms tested during the earlier years of the study, one *(Alcaligenes bookeri*, obtained from the original sample and later isolated from felts of various mills) was found to exceed all others in power of injury. But even this species was found to be less active than a motile rod, Pseudomonas by name, isolated from a damaged felt in 1940. This last named organism was used by Appling *(8)* in experimental work, and in a paper read before the February, 1941, meeting of TAPPI, figures were presented showing losses of tensile strength in felt strips which ran as high as 82.1%. Table II is taken from Appling's report and indicates the losses in tensile strength of strips of felt which had been inoculated with various species of bacteria.

If the organisms which bring about injury to felts are known and their relative harmfulness is determined, extension of investigations now in progress will in time give us a sure groundwork for an attempt to devise methods of reducing the damage which shortens the life of the felt and in some known cases impairs it to a much greater extent than does mechanical wear. Already one milestone in this study has been passed. We think that we now know the principal organisms which injure felts. Without exception, these forms, when grown on gelatin, liquefy that culture medium. Any organism obtained from a felt and shown to be a gelatin liquefier may be at once suspected of the ability to attack the wool fibers which, like gelatin are protein in character. New developments may be expected as investigations proceed.

Slime and White Water

Another phase of our investigations has been concerned with the problem of slime and white water. Slime organisms are of considerable importance in the mill. In the first place they interfere with efficient operation, placing greater strain on wires and heavier loads on the driers. In the finished product they may be responsible for the unsightly spots which are appropriately named slime spots, and the impairment of quality is in direct proportion to the number of spots. Again, they are sometimes responsible for disagreeable odors in the finished paper and occasionally for discolorations. In case extremely large numbers of organisms become incorporated, the paper completely loses its strength.

Slime in the mill most frequently results from the occurrence in the paper stock of numbers of bacteria which, under the conditions present (the chief influencing factor probably being dissolved carbohydrate), thicken their outer walls by the addition of a gelatinous layer of some thickness; these gelatinous capsules of the bacterial cells provide a base for the accumulation of fibers and debris, the whole mass together constituting slime. While various other organisms have been assigned roles of more or less importance in slime formation, it is probable that the filamentous fungi of the mold type are the only ones aside from the capsulated bacteria that enter into the process in a dominant way. Yeasts and algae certainly constitute a negligible and perhaps accidental feature of mill slimes.

The slime problem has been a pressing one in certain areas and probably has received far more attention than any other microbial problem in the paper industry, yet even in this field there is a dearth of investigational records. Beckwith *(4)*, ten years ago, isolated from slime an organism that resembled, but was not identical with, a species of Aerobacter which later he found by experiment was capable of forming slime when grown on a cellulose medium.

Nason and Schumard *(5)* in 1939 called attention to the occurrence of several groups of microorganisms which are found in slime, but with one or two exceptions they named no species.

Schmelkes, Romans, and Martin *(3)* found that they could recognize slime-forming bacteria in culture by the slimy appearance when grown on a spe-

TABLE I.—ORGANISMS ISOLATED FROM FELTS, SLIME, WHITE WATER AND PAPER

Spore Formers

Name of Organism	Source: Felt	Slime	White Water	Paper
Bacillus agri	x	x		
B. cereus	x	x		x
B. circulans	x			
B. cohaerans	x	x		x
B. danicus		x		
B. firmus	x			
B. globiforme	x		x	
B. globigii		x		
B. graveolens	x			x
B. lactis			x	
B. macerans			x	x
B. megatherium	x	x		x
B. mesentericus	x			
B. mycoides	x	x		x
B. niger	x			
B. pabuli			x	x
B. parvus		x		
B. pumilus		x		
B. repens				x
B. silvaticus	x			
B. simplex	x	x		
B. sphaericus	x			
B. subtilis	x	x		x
B. terminalis		x		
B. tumescens	x	x		
B. vulgatis	x		x	
Actinomyces	x			x
Yeast		x		

Nonspore Formers

Name of Organism	Source: Felt	Slime	White Water	Paper
Achromobacter superficiale		x		
Aerobacter aerogenes	x	x	x	
Alcaligenes faecalis	x	x	x	
Alcaligenes bookeri	x			
Alcaligenes radiobacter	x	x	x	
Alcaligenes viscosus		x	x	
Cellulomonas liquata	x		x	
Escherichia coli communis	x	x		
Escherichia coli communior	x			
Flavobacterium synxanthum	x	x	x	
Flavobacterium maris	x			
Flavobacterium aurantiacum	x	x		
Flavobacterium suaveolens	x		x	
Micrococcus luteus		x		
Proteus vulgaris	x			
Pseudomonas fluorescens	x	x	x	
Pseudomonas aeruginosa	x		x	
Pseudomonas schuylkilliensis	x			
Rhodococcus roseus	x			
Sarcina lutea	x	x		
Serratia marcescens	x			
Staphylococcus albus	x			
Streptococcus lactis	x			

TABLE II.—TENSILE STRENGTHS OF FELT STRIPS INOCULATED WITH VARIOUS SPECIES OF BACTERIA

Species of Bacteria Used	Average Tensile Strength, lb.	Reduction in Tensile Strength, %
Untreated	254	
Pseudomonas fluorescens	51	70.6
Pseudomonas aeruginosa	31	82.1
Pseudomonas species III	91	46.4
Bacillus agri var.	35	79.8
Bacillus mycoides	78	54.9

cial medium and by the prominence of the capsule when viewed in an india ink smear under the microscope.

Sanborn *(7)* in 1933 reported ten species of slime-forming bacteria and alluded to a number of groups of filamentous fungi which may occur as slime formers.

Our own isolations from slime and white water resulted in fifty-six cultures from which were obtained thirty-three different species of bacteria. These are shown in Table I. As might be expected, more than half of the number (actually twenty-one of the thirty-three) were forms which are found also in felts. Two of the species *(Aerobacter aerogenes* and *Alcaligenes faecalis)* are apparently very common, as they were found in half of the samples taken. Interestingly enough, though the original samples came from widely separated points, the organisms isolated were almost exclusively bacteria; filamentous fungi were so sparsely represented in the cultures that they were eliminated from consideration in the identificational studies.

Paperboard

Our third area of major interest is paperboard. Only an exploratory beginning has been made in our study of the microflora of paperboard. Samples have been examined in a preliminary way for organisms of peculiar types or those exhibiting uncommon cultural characteristics.

The most interesting organism which we have encountered in boards is *Bacillus macerans,* a rod which is capable of fermenting lactose. A list of those isolated are found in Table I.

As was found to be the case with felts and with slime, most of the organisms we have isolated from boards are forms which are found more or less commonly in various habitats and are widely distributed in nature. They have no particular sanitary significance. In connection with this, however, it is appropriate to call attention to the fact that, in the investigations outlined above, a bacillus which is commonly regarded as the most reliable indicator of pollution of milk and water supplies was found in two of five felt samples and in one of eight slime samples, and that, in one case, a Staphylococcus which is definitely pathogenic was isolated from a felt. From the nature of these organisms, it is entirely possible that their presence in the felt is due to some human contamination; however, because the complete history of the samples was not available, this suspicion cannot be verified.

It is realized that these studies deal with conditions on the wet end of the paper machine. Work being carried out at the Institute on the effect of drying on the organisms will throw considerable light on the significance of these results and will indicate how far a bacteriological study of the finished product (paper or paperboard) or of the converted material should be extended.

Acknowledgment

The Institute and the author acknowledge with thanks the cooperation of the Agricultural Bacteriological Department of the University of Wisconsin and their assistance in checking the identification of some of the species listed in Table I.

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New TAPPI Members

The executive committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership:

R. P. Bigger, chemical engineer, American Can Company, Maywood, Ill., a 1936 graduate of the University of Toronto.

Benton R. Cancell, industrial engineer, American Paper and Pulp Association, New York, N. Y., a 1937 graduate of the University of Michigan and formerly with the American Telephone and Telegraph Company, New York, N. Y.

R. C. Germanson, chemical engineer, Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich., a 1919 graduate of the University of Michigan and formerly with the Institute of Paper Chemistry at Appleton and the Kimberly-Clark Corporation, Neenah, Wis.

Fred Herbolzheimer, Jr., student, University of Maine, Orono, Me.

Ludwig C. Kirchma, development engineer, Socony-Vacuum Oil Company, Kansas City, Mo., a 1931 graduate of the University of Wisconsin and formerly with the Wisconsin State Highway Department, Madison, Wis.

R. L. Kreyling, chemical sales engineer, Philadelphia Quartz Company, Philadelphia, Pa., a 1928 graduate of St. Louis University and formerly with the Provident Chemical Works, St. Louis, Mo.

George A. McBride, chemical engineer, International Filter Company, Chicago, Ill., a 1928 graduate of the University of Michigan and formerly with the Western Cartridge Co., East Alton, Ill.

Edward G. Mullen, chemist, Union Bag and Paper Corporation, Hudson Falls, N. Y., a 1931 graduate of Syracuse University.

Manuel L. Roxas, chief, technical staff, National Development Company, Manila, P. I., a 1905 graduate of Ateneo College and formerly with the Department of Agriculture and Commerce and the Bureau of Plant Industry, P. I.

J. R. Simpson, sales and service, Champion Paper and Fibre Company, Hamilton, Ohio, formerly with the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis. and the Great Northern Paper Co., Millinocket, Me.

Robert A. Stillings, chemist, Kimberly Clark Corporation, Kimberly, Wis., a 1941 graduate of the Institute of Paper Chemistry, Appleton, Wis.

S. E. Walmsley, chief engineer, Bowater's Paper Mills Ltd., Kent, England, attended the Manchester College of Technology and formerly with Walmsley's (Bury) Ltd., Bury, England.

Pulping Loblolly Pine Heartwood with Calcium-, Magnesium-, and Sodium-Base Sulphite Liquors*

By J. N. McGovern[1] and G. H. Chidester[2]

Abstract

Loblolly pine heartwood chips were subjected to the pulping action of calcium-, magnesium-, and sodium-base sulphite liquors before and after the chips had been air seasoned for 3.5 months.

The pulping of the pine heartwood chips was most complete and effective with the sodium base, somewhat less so with the magnesium base, and least so with the calcium-base liquor. The magnesium-base liquor occupied a varying position between the calcium- and sodium-base liquors when judged by the different measures of pulping. The magnesium- and sodium-base liquors, for instance, reacted closely the same in their stability toward exhaustion of the bisulphite in comparison with the less stable calcium-base liquor. The bleach requirements of the magnesium-base pulps, on the other hand, were only slightly lower than those of the calcium-base pulps and considerably higher than those of the sodium-base pulps. The amounts of screenings and yields and chemical purity of the pulps placed those from the magnesium-base digestions approximately intermediate to those from the calcium- and sodium-base digestions. The strength values of the various pulps did not vary greatly for the most part; the comparatively low bleach requirement of the sodium-base pulps made them relatively superior to the others.

The seasoned chips were pulped more successfully by the respective cooking liquors than were the chips from the stored wood. The increased effectiveness of pulping of the chips after seasoning was shown by the decreased amounts of screenings (especially for the calcium- and magnesium-base digestions), the slightly lowered bleach requirements, and the somewhat increased purity of the pulps. The lower bleaching pulps from the seasoned chips had lower strength values than the pulps from the unseasoned chips; the beating times for definite freeness values were especially lower for the former. The cooking liquors were also more stable toward the seasoned chips than toward the chips from the stored wood.

Since the heartwood of southern pine is not satisfactorily reduced to pulp by the sulphite process, some modification of the usual procedure is necessary to render the process adaptable to heart-containing material. Previous work at the Forest Products Laboratory[3] has shown that the use of cooking liquors strong in sulphur dioxide and cooking schedules employing low temperatures and long times aided the pulping of this material *(1)*. Sodium-base liquors also have been found to be fairly satisfactory for pulping well-seasoned southern pine heartwood as well as other refractory woods *(2)*.

The objects in this work were (1) to obtain more data using calcium- and sodium-base liquors on other samples of southern pine heartwood, both seasoned and unseasoned, and (2) to determine the effects of magnesium-base liquors on these woods. The present report, therefore, gives comparative results with calcium-, magnesium-, and sodium-base sulphite liquors in cooking green and seasoned loblolly pine heartwood.

Wood

The loblolly pine *(Pinus taeda)* used in these experiments was obtained from Crossett, Ark., and consisted of the first three 8-foot logs from one tree. The unbarked logs with their ends painted were shipped to the Laboratory shortly after cutting. The sapwood was removed from the upper two logs about 1½ months after cutting, and the remaining heartwood stored for approximately 6 months in a room kept at 40 deg. F. and 95% relative humidity. Five-eighths-inch chips were prepared from the wood after the storage period. A portion of the chips was pulped immediately and the remainder air seasoned for 3.5 months on wire screens before being pulped. The physical characteristics of the wood given in Table I were determined from disks taken before the sapwood was split from the whole logs. Alcohol-benzene and other solubility data on the chips before seasoning and more complete chemical analysis of the chips after seasoning are given in Table II.

TABLE I.—PHYSICAL PROPERTIES OF LOBLOLLY PINE[1]

	Whole section	Heartwood
Diameter, inches	17.4	10.5
Age, years	106	51
Rate of growth, rings per inch	12.1	9.7
Specific gravity—moisture-free weight and green volume	0.443	0.457
Summerwood, %	33	32
Heartwood, %	37	...

[1] Shipment Path. 18. Average results from disks taken 8, 16, and 24 feet above stump.

TABLE II.—CHEMICAL ANALYSES OF LOBLOLLY PINE HEARTWOOD

	Chips from stored heartwood, %	Seasoned heartwood chips, %
Cellulose		
Alpha	..	43.0
Total	..	57.8
Lignin	..	28.2
Pentosans		
In cellulose	..	10.0
Total	..	11.3
Solubility in		
Alcohol-benzene	4.1	4.9
Ether	1.6	2.6
Hot water	..	4.6
1% NaOH	..	13.6

* Presented at the Fall Meeting of the Technical Association of the Pulp and Paper Industry, Ann Arbor, Mich., Sept. 16-19, 1941.

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[2] Member TAPPI; Senior Engineer, Forest Products Laboratory[3], Forest Service, U. S. Department of Agriculture.

[3] Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

Cooking Liquors and Digestion

The calcium-, magnesium-, and sodium-base cooking liquors were prepared, respectively, by adding a water suspension of hydrated lime or magnesium oxide, or a solution of sodium hydroxide to a sulphurous acid solution and then concentrating this liquor to the proper total sulphur dioxide strength by further addition of sulphur dioxide from a cylinder. The acid in all cases contained 7.0% total sulphur dioxide with 1.35% combined.

The digestions were made in an alloy-clad autoclave provided with a steam jacket for indirect heating, and having a capacity of 1.5 cubic feet. The digester charge was 10 pounds of chips on a moisture-free basis and an average of 8.1 gallons of acid for the digestions of the chips from the stored wood and 8.7 gallons for those of the seasoned chips.

The temperature schedule employed in making these digestions was as follows:

	Hours
Time to 110 deg. C.	2
Time at 110 deg. C.	2
Time from 110 to 130 deg. C.	6
Time at 130 deg. C.	5.9 to 8.4

The maximum pressure in all digestions was 75 p.s.i.

All digestions were carried out until the point was reached where the base was completely exhausted. This was determined by the appearance of the liquor and the Sander test for combined sulphur dioxide.

The cooked chips were broken up with an electric stirrer and screened through a small flat screen with 0.012-inch openings. The pulp yields and amounts of screenings are reported in Table III.

The bleach requirements of the pulp were determined by a permanganate number method and a single-stage hypochlorite test. The strength values for the pulps were determined from test beater runs and are reported for freeness values of 800 and 550 cc. (S.-R.). The chemical analyses of the pulps, as well as all the tests, were carried out by Forest Products Laboratory standard methods. The results from all these tests are given in Table III.

Characteristics of the Wood

The loblolly pine had physical characteristics quite normal for an old tree of medium growth rate except possibly for low specific gravity values (Table I). Although a complete chemical analysis of the chips before seasoning was not available, the seasoned chips appeared to be normal for this material with respect to the usual chemical constituents (Table II).

The dryness of the chips from the stored wood, 78.9%, indicated some moisture loss during storing. Air seasoning the chips, as was to be expected, effected a still greater moisture removal, the final dryness being 93.4%. Only alcohol-benzene and ether solubility figures were at hand to show the effect of seasoning. A small increase in both these factors was noted (Table II), which is contrary to usual experience with resinous woods.

Results from Digestions with Liquors Containing Different Cations

When the chips from the stored wood and the seasoned chips were pulped with calcium-, magnesium-, and sodium-base sulphite liquors, a very definite cations effect was noted. Comparison of the results with calcium, magnesium, and sodium in the cooking liquor, all other conditions being the same, shows an increase in pulping time, a decrease in total pulp yield and amount of screenings, a decrease in pulp bleach requirement, small improvement in strength properties, and greater purification. In essence, the variation in cation in the above order resulted in successively more complete pulping and consequently more purified pulp. The various factors comprising the results of the experiments will be considered separately in more detail on the basis of the data in Table III.

Pulping Time

Since all digestions were considered ended only when the appearance of the liquor and its combined sulphur dioxide test indicated the exhaustion of the bisulphite, considerable differences in pulping time resulted from the use of cooking liquors containing the various cations. In fact, under the mild digestion conditions employed, about 2 hours more were required to attain the desired end point with the magnesium than with the calcium-base liquor, and 0.4 hour additional was needed for the sodium in comparison with the magnesium-base liquor for both green and seasoned wood. Thus, both the magnesium- and sodium-base liquors showed more resistance to decomposition of the bisulphite than is characteristic of calcium-base liquors when applied to refractory woods. The magnesium-base liquor, although its stability was only slightly less than that of the sodium base liquor as measured by the pulping time, did exhibit a rapid decomposition of the bisulphite at the end of the digestion. The sodium-base liquor became exhausted in bisulphite in a normal way.

Pulp Yield and Screenings

A considerable reduction in amount of undefibered material or screenings was experienced when magnesium or sodium were substituted for calcium in the cooking liquor. The lowest screenings values—and they indicated practically complete pulping of both samples of loblolly pine heartwood—were realized in the sodium-base digestions. The actual reduction in screenings was greater between the calcium- and magnesium-base digestions than between the magnesium- and sodium-base digestions; the percentage reduction in screenings between the calcium- and magnesium-base digestions, however, was less than between the magnesium- and sodium-base digestions. Using the amount of screenings as a measure of pulping, the magnesium-base liquor thus occupies an intermediate position between the calcium- and sodium-base liquors in its effectiveness in pulping the wood used in these experiments.

The screened yields of pulp from the chips from the stored wood increased in proceeding from calcium- to magnesium- to sodium-base liquors. This showed that the gain in screened pulp at the expense of screenings exceeded that lost by producing more purified pulp. The screened yields from the seasoned chips did not vary greatly. This indicated that the conversion of screenings to screened pulp was balanced by the reduction in screened yield caused by greater purification. The total yields from both wood samples decreased progressively when magnesium and then sodium replaced calcium in the cooking liquor. This showed directly the influence of more complete cooking of the chips.

Bleach Requirement

The trend of more complete pulping with change in cation in the cooking acid from calcium to magnesium

TABLE III.—RESULTS OF PULPING SEASONED AND UNSEASONED CHIPS FROM LOBLOLLY PINE HEARTWOOD WITH CALCIUM-, MAGNESIUM-, AND SODIUM-BASE SULPHITE ACIDS

Cook	Cation in cooking liquor	Total digestion time, hr.	Combined SO_2 at end, %	Yield: Total, %	Yield: Screened, %	Yield: Screenings, %	Bleach requirement: From KMNO4 number, %	Bleach requirement: Single stage hypochlorite, %	Color of unbleached pulp, Ives parts blue	Beater strength tests on pulps—25 x 40—500 ream: Bursting strength, Freeness, S.-R., 800 cc., pts./lb./ream	Bursting strength, Freeness, S.-R., 550 cc., pts./lb./ream	Tearing resistance, Freeness, S.-R., 800 cc., g./lb./ream	Tearing resistance, Freeness, S.-R., 550 cc., g./lb./ream	Folding endurance, Freeness, S.-R., 800 cc., double folds	Folding endurance, Freeness, S.-R., 550 cc., double folds	Tensile strength, Freeness, S.-R., 800 cc., p.s.i.	Tensile strength, Freeness, S.-R., 550 cc., p.s.i.	Solid fraction, Freeness, S.-R., 800 cc., p.s.i.	Solid fraction, Freeness, S.-R., 550 cc., p.s.i.	Beating time, Freeness, S.-R., u.s.i. 800 cc., minutes	Beating time, Freeness, S.-R., p.s.i. 550 cc., minutes	Chemical analysis of pulps: Cellulose, Total, %	Cellulose, Alpha, %	Lignin, %	Total pentosans, %	Ash, %	Solubility in, Alcohol-benzene, %	Solubility in, Ether, %
												Chips from Stored Wood																
250	Ca	15.9	—0.02	54.2	44.2	10.0	28.7	49	39	0.63	0.81	1.70	0.95	245	270	4200	6200	0.41	0.48	13	40	89.5	75.0	7.0	4.6	1.1	1.8	1.1
251	Mg	17.8	—0.08	51.1	47.3	3.8	28.0	44	46	0.77	0.85	1.60	1.25	230	330	5300	6800	0.45	0.49	27	64	91.8	77.0	4.4	4.9	0.8	2.2	1.4
252	Na	18.3	0.04	48.6	48.2	0.4	20.5	26	51	0.83	0.87	1.65	1.20	340	270	5300	7200	0.45	0.49	26	60	95.2	80.0	2.2	5.2	0.6	2.1	1.4
												Air-seasoned Chips																
273	Ca	16.1	0.06	53.0	49.3	3.7	27.8	46	38	0.70	0.75	1.40	1.02	230	250	4000	6200	0.38	0.47	10	26	89.1	75.2	5.7	5.1	1.2	2.0	1.5
271	Mg	18.1	—0.06	50.2	49.2	1.0	26.9	41	48	0.72	0.78	1.40	0.87	470	660	4600	6300	0.43	0.49	14	32	92.5	78.9	3.5	4.8	0.8	1.9	1.6
272	Na	18.4	0.04	48.6	48.4	0.2	17.6	22	53	0.71	0.77	1.45	0.90	450	560	5000	6800	0.43	0.50	12	37	95.1	81.4	1.3	4.9	0.7	2.2	1.8

to sodium was shown by the pulp bleach requirements and unbleached colors, additional measures of pulping action. The calcium- and magnesium-base digestions yielded very hard pulps, that from the latter having a somewhat lower bleach requirement than the former. The sodium-base digestions produced medium-bleaching pulps. The calcium- and magnesium-base pulps, although consistent in trend, differed much less in their bleach requirements than would be expected from the other factors.

The color (Ives blue factor) of the unbleached pulps improved appreciably with change from calcium to magnesium to sodium as the base in the cooking acid.

Pulp Strengths

Only small differences were found in the strength values for the various pulps. On the whole, the pulps from the calcium-base digestions were slightly inferior to the others. The magnesium- and sodium-base pulps had practically the same strength. When the chips from the stored wood were used, the calcium-base pulps showed lower values than the magnesium- or sodium-base pulps in the matter of burst, tear at the lower freeness, and tensile factors. With the seasoned chips the calcium-base pulp exhibited a slightly lower tensile strength than the others. The calcium-base pulps appeared to reach a given freeness value in a shorter beating time than the magnesium- or sodium-base pulps. If it were possible to prepare bleachable pulps having the same bleach requirement from the three pulping agents, the strength values for the sodium-base pulp would be somewhat superior to the others. In any case, the best pulps obtainable from this wood under these or similar conditions would apparently have low strength characteristics.

Chemical Analysis

A regular increase in pulp purity was experienced when magnesium replaced calcium and, in turn, sodium replaced magnesium in the cooking acids. This enhanced pulp purity was indicated by the progressive increase in both alpha and total cellulose contents and by the decrease in lignin and ash contents. The improvement in pulp purity verified the previous evidence of more complete pulping with the cooking acids in the above order. The magnesium-base pulp occupied a position intermediate to the other two.

Results with Chips from Stored Wood and Seasoned Chips

When chips from the stored wood were air seasoned for 3.5 months, their pulping by the cooking liquors containing the various bases, as well as the pulps thereby produced, were altered. The seasoned chips in comparison with those unseasoned required a slightly longer time to reach the desired pulping end point, yielded lower amounts of screenings, and furnished pulps with lower bleach requirements, somewhat lower strengths, and slightly greater purification. In short, the seasoned chips were able to be somewhat more completely pulped than those from the stored wood under the conditions used. The results will be discussed in more detail from the data in Table III.

Pulping Time

The seasoned chips required 0.2 hour more (average for the three liquors) than the chips from the stored wood to reach the point where the bisulphite in the cooking acid was exhausted. The relative pulp-

ing times for the liquors containing the various cations were the same for both types of chips. Actually, then, seasoning had only a small effect on the pulping time. Because the larger amount of liquor charged in the digestions of seasoned chips was diluted less by water in these chips in comparison with wetter chips from the stored wood, more rapid pulping might be expected for the former. On the other hand, chemical and physical changes in the seasoned chips might allow greater stability of the cooking acid toward the end of the digestion and hence lead to longer and more normal cooking as compared with the others. In the present case, perhaps, these two effects have almost balanced one another. The net result should be more complete pulping, as actually was the case.

Pulp Yield and Screenings

The amount of screenings resulting from cooking the seasoned chips was substantially lower than from cooking the chips from the stored wood. This reduction was especially noticeable in the calcium-base digestions where the chips from the stored wood had a high screenings figure. The numerical reduction in screenings was less for the magnesium than for the calcium-base digestions and small indeed for the sodium-base digestions due to the rather complete cooking of the chips from the stored wood. In all cases the amount of screenings from the seasoned chips were half, or less, of those from the chips from the stored wood. The screenings data show an appreciable effect of seasoning not indicated by the apparent pulping time results.

The screened yields were higher from the seasoned chips than from the others, the increase being attributable to the conversion of screenings into defiberable material. The increases in screened yield were commensurate with the decreases in amounts of screenings from all digestions. The fact that the screened yields from the seasoned chips do not account for all the material apparently converted from the screenings is due, of course, to the increase in the purity of those pulps. The total yields from the calcium and magnesium digestions were lower from the seasoned chips than from the others. The sodium-base digestions showed the same total yields of pulp.

Bleach Requirement

The pulps from the seasoned chips had somewhat lower bleach requirements than those from the chips from the stored wood. This trend is in line with the results on pulping time and screenings and yield, and indicates that more complete pulping is possible with the seasoned chips than with chips from the stored wood. The colors of the unbleached pulps were very little affected by the use of seasoned wood.

Pulp Strength

The pulps from the seasoned chips had, in general, lower strength factors than those from the stored wood. The differences were possibly greater than might be expected from the lower bleach requirements for the former. The folding endurance factors were exceptions to this trend, being slightly higher for the pulps from the seasoned chips. The beating time required for a pulp to attain a certain freeness was shorter for the pulps from the seasoned chips.

Chemical Analysis

While no difference was noted in the total cellulose contents of the various pulps from the seasoned chips in comparison with those from the stored wood, evidence of somewhat greater purity for the former was present in the form of higher alpha-cellulose and lower lignin contents. This latter trend was in line with the bleach requirement data. The pulps from the seasoned chips had ether and alcohol-benzene solubilities not greatly different from those from the stored chips. This is in agreement with these factors in the chips. The usual trend, however, is toward a decrease in these solubilities in pulps from seasoned wood.

Literature Cited

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Kalamazoo TAPPI Discusses Hybrid Poplars

The first fall meeting of the Kalamazoo Valley Section of TAPPI was held at the Park-American Hotel, Kalamazoo, Mich. on Thursday evening, October 2, with thirty members and guests present. Fred L. Chappell, Jr., Sutherland Paper Company, presided as chairman.

Following the dinner, Paul de Guehery, Michigan Paper Co., and Harry Bradford, Rex Paper Co., reported the progress made by the vocational training program committee.

The guest speaker of the evening was Ralph H. McKee, of the McKee Poplar Forestration, Inc., who spoke on "Quick growing trees for pulp and lumber uses." After the expenditure of approximately $270,000 and several years time, Dr. McKee has been able to produce a hybrid tree that grows ten to fourteen times as fast as aspen or poplar. This tree grows one inch a year in diameter and six feet a year in height. The wood fiber is 25% longer than aspen.

The subject proved very interesting to the members present since the soil and climate in the Kalamazoo Valley is suitable for growing these trees described by Dr. McKee. The Kalamazoo Valley uses approximately 600 tons of soda pulp a day and this amount could be produced from trees grown on 60,000 acres of land.

Those attending the meeting were: Ralph Atkins, Ray Barton, N. J. Berzer, Harry Bradford, Rex Bradt, Fred Chappell, A. M. Cole, Dwight Cook, N. J. Cowie, F. D. Elliott, P. C. Fish, Charles Gardner, Paul de Guehery, A. E. Hays, R. H. Hurst, G. T. Ingling, W. K. Kidder, Howard McCoy, Ralph McKee, Leon Mimms, Martin J. Roberts, Homer Stafford, E. B. Taylor, W. S. Taylor, C. R. VanderMeulen, Joseph L. Waber, Arthur Weinland, and J. G. Wright.

Florida Pulp & Paper Co. Opens

Pensacola, Fla., October 13, 1941—The new $2,500,000 plant of the Florida Pulp and Paper Company was opened formally Thursday of last week. Successful trial operations of the mill have been conducted for nearly a month. The plant employs 350 men in the mill and 350 in the forest and has an annual payroll of about $500,000, according to James H. Allen, president of the company.

Capitalized at $3,750,000, the company has more than 130,000 acres of Florida pine lands from which pulp wood will be taken.

The Relation between Bleachability and Other Pulp Characteristics*

By T. A. Pascoe[1], H. E. Nelson[2] and Marian Fraser[3]

Abstract

Practical consideration has undoubtedly been given to the question of the relation of degree of cooking to other pulp characteristics such as bursting, tearing, tensile, and folding strengths as well as behavior in beating. There has not been a commensurate amount of formal investigation carried out looking toward precise evaluation of these relations. The fact that a number of different methods have been used to measure the degree of cooking together with recent evidence that the different methods are not strictly comparable, undoubtedly explains some of the inconsistencies found in the published results. Generally, it has been found that bursting and tensile strength increases with increasing hardness in the range of conventional pulps. Tearing resistance may steadily decrease or rise to maximum and then decrease with increase in pulp hardness. Beating time to a given freeness increases with increasing pulp hardness. The relations generally hold for both sulphite and sulphate pulps. The inconsistencies present in existing information strongly indicate that care must be exercised in applying the conclusions obtained from a study of one grade of pulp to other pulps not produced under identical conditions.

Information leading toward knowledge of the "oxidizable materials" content of chemical wood pulps has been used in two ways. The use that undoubtedly resulted in the origin of interest in this pulp fraction was to predetermine the consumption of bleaching chemicals. The other use involved the "degree of cooking" concept in connection with pulps not intended for bleaching. It is this latter phase of the question that this paper will consider.

If the question of bleach consumption is not involved, it is obvious that the *degree of cooking* information is to be taken as an index of some one or more useful pulp characteristics. This view of the matter disregards the wide use of the information as purely a measure of uniformity in pulping from cook to cook. It is known that many pulp and paper mill men have formed ideas with respect to the relation between degree of cooking and strength characteristics of both sulphite and kraft pulps. Other properties such as softness, absorbency, and porosity have been considered as related to degree of cooking.

There has been, without a doubt, a good deal of speculation with probably the formation of many opinions and private hypotheses dealing with this subject. Strangely, few people have attacked the problem in a positive fashion and published their results.

There is a large amount of published information that is incidentally related to the problem. The type of paper referred to is one in which a series of cooks are studied, stressing yield and strength but including degree of cooking data together with such information as lignin content, alkali extraction, pentosans, viscosity, etc. Data of this type are not sufficiently conclusive for the present purpose because of too few tests to show more than vague tendencies or trends.

Another difficulty encountered in surveying the literature dealing with the present subject is the reflection of the fact that the individual components making up the *oxidizable materials* have not been well identified. A number of published papers stress only lignin, other authors have studied the effects of the various carbohydrate fractions that must be considered as important in the oxidizable materials group.

To sum up the present status of the published literature on the subject at hand, it can be stated that there are a few papers that deal with the subject directly and that there is a considerable amount of data available of interest in a confirmatory way, yet are inconclusive.

Degree of Cooking

Genberg and Houghton *(1)* studied the results from 311 tests on unbleached sulphite pulps. Using the Roe chlorine number as a measure of the oxidizable materials in their pulps, they reported a range of 1.8 to 5.4 in chlorine number for the pulps studied. According to the conversion data of Johansson *(2)* this would correspond roughly to a range in permanganate number of from 10 to 23. These workers concluded that bursting strength increased in a straight line relationship with increase in Roe chlorine number over the range 1.8 to 4.4 (permanganate number approximately 10 to 18). Beyond this range, the rate of increase of bursting strength declined. Tearing resistance and freeness increased with an increase in chlorine number, reaching a maximum at about 3.8 (permanganate number about 17) after which both decreased sharply. This paper stresses the fact that these specific relationships held only within the same grade of pulp. The pulp strengths referred to in this work were from laboratory pulp tests using a ball mill as beating equipment. The large number of observations reported in this paper adds weight to the conclusions reached. The range of chlorine numbers included in the series of pulps studied covers both bleachable and unbleached pulps according to present day standards. The paper is somewhat incomplete, because the methods that were used to reduce the data from 311 observations to one tenth that number tabulated in the publication, were not indicated. A study of the variability of the various test results and testing for correlations using modern methods would add to the reliance placed on the results.

Incidental to the main object of the paper under

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* Presented at the Fall Meeting of the Technical Association of the Pulp and Paper Industry, Ann Arbor, Mich., Sept. 16-19, 1941.

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discussion, the authors refer to the relation that Genberg and Jonsson *(3)* had reported earlier between Roe chlorine number and lignin content as determined by a modification of Halse's method. It is apparent from a study of the earlier paper, that the values shown in the later publication are not from the pulp series there reported.

Hall *(4)* studied four unbleached sulphite pulps in parallel with four unbleached kraft pulps having essentially the same lignin contents. Using lignin content in this case, as an index of degree of cooking, this paper is of interest. The lignin contents of the unbleached sulphite pulps were 3.8, 4.9, 5.7, and 7.1%, respectively. For the kraft pulps corresponding values were 1.7, 3.1, 4.7, and 7.7% lignin. From a study of the various pulp strength tests and the lignin contents, Hall concluded that a relation between folding endurance, bursting, and tensile strengths, and lignin contents must exist. Each of the mentioned strength tests increased with increasing lignin contents. It is assumed from the context that both types of pulp were included in this generalization. The tearing resistances showed a maximum at about 5% of lignin for both sulphite and sulphate pulps. At the same degree of beating and lignin contents, sulphate pulps were found to give more porous papers than sulphite. If papers were made from sulphate pulps of various degrees of cooking and beaten to obtain the same strength, Hall stated that the porosities of the papers would be directly dependent on the degree of cooking—i.e., the harder pulps would make the more porous papers. Absorbency, it was concluded, was directly related to the degree of cooking for both sulphate and sulphite pulps. It was further concluded that in the case of sulphate pulps, ease of beating was inversely proportional to their increased lignin contents. In the case of sulphite pulps, however, the influence of polysaccharides might exceed that of lignin so far as ease of beating was concerned. Thus, it is possible that some hard sulphite pulps may possess better beating properties than softer pulps.

Hall finally concluded that the differences in strength between indirect and direct cooked sulphites were larger than would be expected from their lignin contents alone. This point will be discussed at greater length later.

By way of critical evaluation of this paper, it should be pointed out that the range of "hardness" of the pulps examined was comprehensive. It will be indicated later that, although this matter of wide range of hardness may at first appear as a desirable feature, it possibly may be a complication in attempting to measure relations between degree of cooking and the strength properties of pulps. The observation of only one pulp for each degree of cooking interval necessitates some caution in accepting the conclusions in any manner except as generalizations of the results that might be expected from work of this nature.

Johansson *(5)* investigated a number of unbleached spruce and jack pine kraft pulps to determine possible relations between Roe chlorine number and strength properties. In the series was one pulp with the high chlorine number of 9. In the unbeaten condition it was found that as the chlorine number increased, the breaking length and bursting strength decreased, while the tear remained essentially unchanged. When beaten to a standard freeness, the breaking length and bursting strength increased to a maximum at a chlorine number of 7.0. The tearing resistance showed a small decrease with increase in the chlorine number whereas beating time, to obtain a standard freeness, decreased.

Johansson *(2)* in a paper chiefly concerned with a method for measuring degree of cooking, gave a note of warning against attempting to evaluate pulps for their paper making qualities by means of chemical tests alone. He concedes that considerable information regarding the physical properties of pulps can be obtained by means of properly interpreted chemical tests. He pointed out that most reliance could be placed on tests involving pulps prepared by conventional cooking procedures. Without giving confirming data, Johansson stated in the case of sulphite pulps, that tensile and bursting strength will increase with chlorine number, while tearing resistance and time of beating to a given slowness will decrease slowly with a rise in chlorine number. He further stated that these changes were greatest in the range of low chlorine numbers. On the face of it, this statement is in disagreement with the conclusions of Genberg and Houghton who observed a rise in tearing resistance with increase in chlorine number in the range of lower chlorine numbers. There is no assurance that the two investigators were considering the same range of chlorine numbers. Johansson's low chlorine numbers may have coincided with the values that gave Genberg and others maximum tear and freeness values. Considering sulphate pulps, Johansson stated that tensile and bursting strengths showed a marked rise with chlorine number in the range of bleachable and "light and strong" kraft pulps. In the range of regular kraft pulps changes in chlorine number showed changes in strength that were slight. The tearing resistance showed first an increase and then a small decrease in going from soft to hard pulps. It was stated that beating time increased with chlorine number. Johansson also stresses the fact that caution must be observed when comparing pulps that have not been prepared by using essentially the same pulping conditions.

Lewis and Richardson *(6)* investigated the relations between lignin content of four especially cooked kraft pulps and their strength properties. This work explores a range of lignin contents beginning at about the maximum encountered in conventional kraft pulps and extending much beyond this point in hardness into the range of semi-chemical pulps.

The results reported in this paper are of interest in that the highest strengths found were shown for the pulps with the lowest lignin content (8.6%). This value is of the same order of lignin contents that have been found by other investigators to give maximum bursting and tensile strengths. It is sufficient to say that this paper strongly indicates that practical limit of lignin content beyond which no desirable strength results could be expected. Of incidental interest in connection with the question under discussion is the picture this work gives of the actual effect of the physical presence and position of the lignin on the fiber as it affects its ability to react to beating and to strength development.

Pascoe and Fraser *(7)* have recently studied the relations between bleach value (permanganate number) and a number of other pulp characteristics using statistical methods. Generally, large groups of tests were analyzed in order to increase reliability. Statistical methods were considered particularly suitable for the study of material as inherently variable as pulps. The results could be expressed in terms of definite numerical expressions of measured accuracy.

Statistical Studies

The first study was made on a group of spruce sulphite pulps of bleachable grade. Significant positive correlations were found relating *bleach value* to burst and tear, also to burst and tear at 400 cc freeness (Green). Tearing resistance showed less correlation than bursts. These findings confirm all earlier work with respect to bursting strength, but are at variance with most published results as regards tear —i.e., that tear increased with increases in bleach value. These results were fully confirmed in another study of a group of pulps prepared or cooked under the same conditions—i.e., without circulating systems on the digesters. After the installation of a circulating system, a comparable group of pulps was examined with the startling result that no significant correlations between *bleach* values and the other pulp tests were obtained. This complete change in relations, due to the introduction of forced circulation into the cooking procedure, has never been satisfactorily explained. The two groups of pulps were quite comparable in all respects. The bleach value range was essentially the same. The pulps prepared with circulation were slightly higher in strength cnaractertistics than the other group. The statement made by Hall, that the differences in strength between direct and indirect cooked pulps were larger than could be accounted for from their lignin contents, may be significant in this regard. It seems that Hall must have encountered some unexpected result in thus comparing pulps prepared by different cooking procedures. Whatever the explanation may be, these results emphasize again, the caution that should be exercised in comparing pulps not prepared under almost identical conditions.

Incidental to a study of loss of strength in bleaching, the relation between loss of bursting strength and tearing resistance and the degree of cooking of the unbleached parent pulps was investigated. It was found that there was no relation so far as burst was concerned. There was some evidence, however, that the harder pulps lost somewhat less tearing resistance than softer pulps. Again these results would probably be valid only for the set of cooking and bleaching conditions used.

An investigation involving cuprammonium viscosity and its possible relation to other pulp characteristics showed a significant positive correlation between bleach value and viscosity. This indicated a definite tendency for hard pulps to show higher viscosities than the softer pulps.

A series of 169 unbleached jack pine kraft pulps was studied to show possible relations between degree of cooking and strength and beating characteristics. These pulps were cooked using essentially the same chemical charge and time-temperature schedule. The statistical analysis showed a small negative correlation between permanganate number and bursting strength.

This result was in striking disagreement with all published information. Although the magnitude of the correlation coefficient was low, its standard error indicates that it is significant. Statistical tests for a chance occurrence show that it could occur only twice in 100 instances. The reason for the lack of agreement with published results is not at once apparent. The pulps may have been comparable to the regular kraft pulps cited earlier than Johansson stated showed little change of bursting and tensile strengths with change in chlorine number. The lignin contents of this particular series of pulps were not determined. From general information on the lignin content of this grade of pulp (4 to 5%), these pulps would fall in a position on the low side of the maximum observed by Johansson *(5)* at a lignin content of 7%. It is conceivable that this grade of pulp might have a maximum for bursting strength development at a lower lignin content than 7% and that a large number of this series of pulps would occur on the descending side of the maximum. Tearing resistance and permanganate number showed no significant correlation. This result might be explained as due to the position of these pulps at the flat maximum point of a curve that, according to Johansson *(5)* reached the maximum at 5% of lignin. To study the effect of degree of cooking on beating characteristics, correlations were calculated for permanganate number and bursting strength and tearing resistance change for a standard period of beating. These strength results showed that the harder pulps developed less bursting strength than did the softer pulps when all were beaten for the same period. Change in tearing resistance and freeness, during beating for a given period, showed no relation to degree of cooking, Taking a general view of the results from this study, it can be stated that the one point they do prove is that it is dangerous to compare kraft pulps from different mills when considering the degree of cooking and its relation to other pulp qualities.

Pascoe and Fraser *(8)* have recently studied a series of spruce sulphite pulps cooked for unbleached use. This series, from the standpoints of wood, acid strength, digester equipment, and pulp testing technique, should be comparable to the first series of bleachable pulps mentioned above. The methods used to analyze the data were the same as used in the first mentioned series. The results from this study are given in Table I which includes the corresponding data from the previous study on bleachable pulp.

TABLE I.—STATISTICAL ANAYLSES OF A GROUP OF 40 SPRUCE SULPHITE PULPS, COOKED FOR UNBLEACHED USE

Variable	Mean and Standard Error		Standard Deviation and Standard Error		Coefficient of Correlation of Bleach Value and Each Variable and Standard Error	
	Bleachable *	Unbleached	Bleachable *	Unbleached	Bleachable *	Unbleached
B	14.70 ± .35	22.12 ± .64	2.33 ± .24	4.05 ± .45	....	....
M	242.53 ±3.65	230.55 ±3.41	23.90 ±2.58	21.55 ±2.41	+0.833 ±0.047	+0.306 ±0.143
T	214.86 ±3.28	234.20 ±4.01	21.48 ±2.32	25.36 ±2.84	+0.357 ±0.133	—0.140 ±0.155
P	457.42 ±3.92	464.50 ±3.46	36.32 ±3.92	21.91 ±2.45	+0.757 ±0.065	+0.111 ±0.156
M_{400}	135.05 ±1.96	130.12 ±1.72	12.88 ±1.38	10.87 ±1.22	+0.770 ±0.062	+0.175 ±0.153
T_{400}	95.07 ± .80	100.55 ±1.39	5.29 ± .54	8.77 ± .98	+0.359 ±0.133	—0.155 ±0.154

* Data taken from Table I, Pascoe and Fraser (7)

NOTE: B = Bleach Value (Permanganate Number)
M = Burst Value (Sum of Bursts at 5 and 25 minute beating intervals)
T = Tear Value (Sum of Tears at 5 and 25 minute beating intervals)
P = Pulp Value (M + T)
M_{400} = Burst at 400 cc. freeness
T_{400} = Tear at 400 cc. freeness

Items of particular interest in the table are the coefficients of correlation for bleach value and each of the other variables. Comparing the values in Column 5 with those in Column 6 shows that the

bleachable pulps show highly significant positive correlations, while the harder pulps for unbleached use show no significant correlations. A possible general explanation of the lack of agreement between these two series of pulps would be that the cooking schedule used for the harder pulp may have retained sufficiently more of the hemi-celluloses, pentosans, etc., to upset the usual relation between degree of cooking and strength characteristics. The lack of relation between bursting strength and degree of cooking might be explained if the lignin contents were within the range that falls on the non-linear portion of the general curve, which has been found by a number of workers to express the cooking degree-bursting strength relationship. It would be expected from published information that a negative correlation between tearing resistance and degree of cooking would have been found. The positive correlation found in the case of the easy bleaching pulp suggests that this grade of pulp was one that showed an increase in tear with increasing hardness up to a maximum and then a decrease with further increases in hardness. The result for the unbleached pulps could then be explained if their range of hardness fell at or near the maximum. The reason, for the total lack of relation between hardness and strengths developed by beating to a given freeness, may be explained on the basis of a similar hypothesis to that mentioned above for tearing resistance. The positive correlations found in the case of the bleachable pulps would suggest such a possible explanation.

In attempting to reconcile the findings of Pascoe and Fraser with other published results, all of the work of the former is based on the permanganate number as a measure of oxidizable materials, while a great deal of the earlier work is based on the use of the Roe chlorine number or lignin contents as measures of degree of cooking. The recent work of Knight *(9)* indicates that this difference in methods might lead to quite different results. Knight found that chlorine used in the chlorine number procedure can react by substitution and as an oxidant. It was found that the different components included in the group of so-called oxidizable materials, react with chlorine and permanganate in quite different manners. It would seem, therefore, that different investigators in this field have not been using the same unit of measure for measuring the oxidizable materials in pulps.

Additional evidence supporting the view that serious discrepancies are possible in this matter has come to the writers' attention. Some experimental, specially cooked kraft pulps have been obtained, that showed permanganate numbers in a range lower than usually encountered for sulphite pulps. Upon bleaching these pulps, however, it was found that about the same amount of bleach chemicals were required as normally were used for bleaching regular bleachable kraft pulps. Chlorine numbers have not been determined on these pulps. Lignin determinations show that these pulps contain but slightly less lignin than commercial bleachable pulps. One per cent caustic solubility, used as a rough measure of the oxidizable carbohydrate portion of the oxidizable materials, indicates that these materials are present in normal amounts. Further work is in progress to attempt to explain this unusual condition.

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Patents*

By Charles W. Rivise[1]

Abstract

Our patent system is based upon the principle that the inventor is a public benefactor, and as such is to be justly compensated. Until recently, the courts considered it to the public interest to sustain patents wherever possible. So many patents have been invalidated in recent years that apparently the courts now consider it to the public interest to invalidate patents. The changed attitude of the courts is apparently due to a mistaken belief that a patent is a monopoly and deprives the public of an inalienable right. The unfortunate consequence is that the incentive to invent, which, in the past has been responsible for so many epoch-making inventions, is being slowly but surely destroyed.

The federal government has recognized the fact that if democracy is to survive the present emergency, invention and ingenuity must be encouraged and stimulated to the utmost. The National Inventors Council reports that the nation's inventors are doing their bit. It is up to the rest of us to see to it that the inventor is not deprived of his just reward. The patentee's exclusive right in his invention should be respected, and the patent laws should be sympathetically and liberally administered.

Our patent system is based upon the principle that the inventor is a public benefactor, and as such is worthy to be protected in the exclusive use of his invention until he has had a reasonable opportunity to reimburse himself for the time, effort, and money that he may have expended in making available his contribution to the arts and sciences.

In the very nature of things, the best interests of the public are inseparably bound up with the best interests of the inventor. It is the individual inventor, the temporary beneficiary of the patent system, who in the past has initiated most of the important industry-creating inventions, and who in the future

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will undoubtedly continue to create a large proportion of the really worthwhile inventions. Without the assurance of an adequate reward in the way of patent protection, the individual inventor will either cease to make new and useful inventions or will suppress and keep them secret. This is particularly so, because it is difficult and in many cases even impossible to raise sufficient capital to commercialize an invention and thereby render it available to the public, unless adequate patent protection can be secured. It follows, therefore, that the public, which is the chief and lasting beneficiary of the patent system, will be the losers in the long run.

From what has been said, it would seem to follow that in deciding patent cases the courts should consider it to the public interest to sustain patents, wherever possible, and to give them a liberal construction. This was the usual attitude of the courts until about a decade ago.

In the celebrated Eibel case, [Eibel Process Co. *v.* Minnesota & Ontario Paper Co., 261 U. S. 45 (1923)] the late Chief Justice Taft stated: "In administering the patent law the court first looks into the art to find what the real merit of the alleged discovery or invention is and whether it has advanced the art substantially. If it has done so, the court is liberal in its construction of the patent to secure to the inventor the reward he deserves."

As late as 1934, the Supreme Court stated [Radio Corp. of America *v.* Radio Engineering Laboratories, Inc., 293 U. S. (1934)] "A patent regularly issued . . . is presumed to be valid until the presumption has been overcome by convincing evidence of error . . . one otherwise an infringer who assails the validity of a patent fair upon its face bears a heavy burden of persuasion, and fails unless his evidence has more than a dubious preponderance . . ."

Within the last few years so many patents have been invalidated by the courts or interpreted so narrowly as to create the impression that courts consider it more to the public interest to decide against the patentee than in his favor. It has been sought to justify the almost wholesale invalidation of patents on the ground that the Patent Office has lowered its standards and is issuing an enormous number of patents on devices that either do not involve invention or which are of no commercial importance. A careful reading of recent patent decisions clearly indicates that the Patent Office has not lowered its standards, but that the courts have greatly raised the so-called standard of invention. Not so long ago, if the testimony in a case indicated that a patentee had successfully solved a difficult problem and that the result was a step forward in the practical art, the court would brush aside technicalities and finely spun arguments, and hold the patent valid. Today, the same court would be inclined to hold the patent invalid, unless it was convinced that the inventor had displayed inventive genius of a high order.

In the writer's opinion, the great increase in the number of invalid patents is due to the mistaken belief on the part of courts that a patent, instead of being the inventor's just reward for making a valuable contribution to the practical arts, is a burdensome monopoly. The inventor who had previously been regarded as a public benefactor, appears now to be considered as a monopolist who would deprive the public of an inalienable right. The infringer, who had hitherto been considered as a trespasser upon the patentee's rights, has apparently become the champion of the public in its efforts to free itself from the toils of the so-called patent monopoly. In other words, the patentee and the infringer have seemingly changed roles so that now the infringer, instead of the patentee, is apparently regarded as the public benefactor.

The changed attitude of the courts toward patents is indeed very unfortunate—unfortunate for the striving inventor, but infinitely more so for the public at large. The courts, in their sincere efforts to safeguard what they deem to be the paramount interests of the public, are slowly but surely destroying that incentive which made our patent system the most effective economic instrumentality ever devised by man. In effect, they are killing the goose that lays the golden eggs.

At the TAPPI 1941 Annual Meeting in New York, I stated *(1)*: "If democracy is to survive the present emergency, invention and ingenuity must be encouraged and stimulated as they were never before in the history of the world. This necessarily means that the contributions of the inventor, who, in the final analysis, is the benefactor of all humanity, must receive due recognition. It is not sufficient that celebrations be held every so often in honor of the inventor as a class, or that monuments be erected to individual inventors long after they are dead. Justice to the inventor requires that patent protection be made to mean exactly what the founders of our nation intended it to mean, namely, a means whereby the inventor may receive a reasonable compensation for the time, effort and money that he may have expended in making available his contribution to the arts and sciences."

The federal government in August, 1940 realized the truth of the foregoing statement, and established the National Inventors Council. The purpose of the Council, which consists of outstanding American inventors, scientists, and industrialists, is to encourage the public to submit inventions or inventive ideas of defense value, and to obtain prompt evaluation of these inventions.

As stated by the Council: Information Bulletin No. 2 "How Inventors Can Aid National Defense": "During the first 6 months of operation, the Council received approximately 30,000 communications, of which about 16,000 contained inventions or inventive ideas. A surprisingly large percentage of these have possessed sufficient merit to warrant serious consideration. A number already have been accepted for use by the Army, the Navy, and other government agencies."

There can be no doubt that the inventors of America are doing their bit in this period of stress and emergency. It behooves each and every one of us to recognize the magnificent work of the inventors by seeing to it that they are not unjustly deprived of the reward provided by our patent system. For the industrialists, this necessarily means that they should respect the inventor's patents as they would have their own property respected. For the courts, this means that they should administer the patent laws in a sympathetic and liberal spirit and in such a way as to encourage and stimulate further invention.

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Imports of Paper and Paper Making Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard; Bleached Sulphite More Acute—Some Grades of Old Waste Lower.

Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING OCTOBER 11, 1941

SUMMARY

Newsprint	15,794 rolls
Heliographic paper	18 cs.
Tracing cloth	12 cs.
Decalcomania paper	75 cs.
Tissue paper	25 cs.
Drawing paper	6 cs.
Filter paper	6 cs.

NEWSPRINT

——, —— Cornerbrook, 3,881 rolls.
H. G. Craig Co., Inc., ——, Donnacona, 372 rolls.
——, ——, Liverpool, N. S., 1,785 rolls.
H. G. Craig Co., Inc., ——, Donnacona, 401 rolls.
——, ——, Comeau Bay, 7,320 rolls.
H. G. Craig Co., Inc., ——, Donnacona, 324 rolls.
——, ——, Liverpool, N. S., 1,711 rolls.

HELIOGRAPHIC PAPER

H. S. Dorf & Co., ——, Santos, 18 cs.

TRACING CLOTH

——, ——, Liverpool, 12 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., ——, Liverpool, 45 cs., (duplex), 30 cs., (simplex).

TISSUE PAPER

G. F. Malcolm, ——, Liverpool, 15 cs., (gauze carbonizing).
B. F. Drakenfeld & Co., ——, Liverpool, 6 cs., (pottery).
——, ——, Liverpool, 4 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., ——, Liverpool, 6 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., ——, Liverpool, 6 cs.

RAGS, BAGGINGS, ETC.

National City Bank, ——, Buenos Aires, 3 bls. rags.
West Texas Cottonoil Co., ——, Santos, 96 bls. cotton linters.
Lush Cotton Products Co., ——, Rio de Janiero, 29 bls. cotton waste.
Philadelphia National Bank, ——, Santos, 973 bls. cotton linters.
West Texas Cottonoil Co., ——, Santos, 465 bls. cotton linters.
——, ——, Rio de Janiero, 47 bls. cotton linters.
J. Levy & Son, ——, Havana, 25 bls. rags.
——, ——, Suez, 70 bls. new cuttings.
New England Waste Co., ——, Buenos Aires, 959 bls. cotton linters.
Kauders Steuber Co., ——, Santos, 489 bls. cotton linters.
——, ——, Liverpool, 49 bls. rags, 34 bls. thread waste.

OLD HEMP ROPE CUTTINGS

R. L. Pritchard & Co., ——, Calcutta, 800 bls.

GLUE STOCK

Universal Commercial Corp., ——, Buenos Aires, 40 bls.

HIDE GLUE

Trans-Atlantic Animal By-Products Corp., ——, Buenos Aires, 100 bags.

SKIN GLUE

Biological Raw Products, Inc., ——, Buenos Aires, 112 bags.

BONE GLUE

C. W. Hewitt & Bros., ——, Santos, 400 bags.
Biological Raw Products, Inc., ——, Santos, 300 bags.
Biological Raw Products, Inc., ——, Rio de Janeiro, 140 bags.

CASEIN

A. Hurst & Co., ——, Buenos Aires, 290 bags.
Eugenio Lang, ——, Buenos Aires, 417 bags.
H. S. Cramer, ——, Buenos Aires, 1,085 bags.
Credo Commodities Co., Inc., ——, Buenos Aires, 250 bags, 15,000 kilos.
C. W. Burckhalter, ——, Buenos Aires, 284 bags, 17,040 kilos.

New Literature

Woven wire screen cloth is described in Bulletin No. 113, issued by the Robins Conveying Belt Company, Passiac, N. J. It gives information on the metallurgy of Robins screen cloth wire, selection of the proper screen cloth for particular applications and includes specifications and data on the subject.

Drum type separators are discussed in Bulletin No. 50, issued by the Stearns Magnetic Manufacturing Company, Milwaukee, Wis. It contains full details of the Stearns Type "DH" drum type separators adopted for use in purifying fine powdered materials. Bulletin No. 225-A, issued by the company, describes the subject of magnetic cloth and brake combinations, with engineering data.

Indicating, recording and controlling instruments are described in a new Chart Catalogue No. 1230, issued by C. J. Tagliabue Manufacturing Company, Park and Nostrand avenue, Brooklyn, N. Y. It gives information on the recorder features of the "TAG" line, such as 9, 10 and 12-inch mercury and gas-filled ranges and charts.

Babitted pillow blocks for industrial service are described in Bulletin A-401, issued by the Dodge Manufacturing Corporation, Mishawaka, Ind. It presents the new "Sleevoil" line, with engineering data.

John A. O'Brien Made Vice President

The election of John A. O'Brien to the post of vice president of Johns-Manville Sales Corporation was announced on October 1 by Lewis H. Brown, president of Johns-Manville. Mr. O'Brien will continue his duties as general sales manager of the power products and industrial department, a post he has held since 1938. He is a member of the J-M Quarter Century Club, having begun his career with the company in 1915, and is a member of the Engineers Club, New York.

New York Paper and Pulp Market Review

Paper Production Continues To Steadily Increase Under Heavy Demand From Government and Regular Trade—Major Grades of Waste Paper Subject To New Maximum OPA Price Schedule.

Office of the PAPER TRADE JOURNAL,
Wednesday, October 15, 1941.

Back of the heaviest demand for paper and paper products on record, is the large government requirements for defense, lend-lease and rapidly increasing consumption of many grades of paper by the government itself. According to Norbert A. McKenna, Chief of the Pulp and Paper Division of the Office of Production Management and Civilian Supply, the government will take 30% of the available supply of paper in 1942.

The Joint Congressional Committee on Printing, according to a late government report, will purchase for use of the Government Printing Office about 1 million more pounds of newsprint, 2 million more pounds of postal card stock and 1½ million more pounds of offset paper in the six month period, beginning January 1, 1942, than it purchased last year.

The large estimated requirements of the government, with repeated emphasis on a paper shortage has, according to some quarters of the industry and trade, created fear of lack of adequate supplies in many consumer's minds and encouraged increased buying for the future. How much tonnage this forward purchasing amounts to is, of course, not known, but it is considered an important factor by some quarters of the trade in the current supply situation.

Paper production is steadily being expanded in many lines. This is indicated in trade reports. The production ratio for the week ended October 4 was estimated at 106.7%, compared with 85.4% for 1940, with 93.3% for 1939, with 81.6% for 1938, and with 77.0% for the corresponding week for 1937.

Paper board production for the week ended October 4 was 100.0%, compared with 78.0% for 1940, with 83.0% for 1939, with 70.0% for 1938, and with 67.0% for the corresponding week for 1937.

Prices on all paper and paper products are firm with no important changes reported this week.

Chemical Pulp

The OPA announced this week that its schedule of maximum prices on wood pulp will conform to third quarter prices of this year. The prices thus far announced include the following grades only: bleached sulphite, bond and book grades, $72.50 per ton; prime unbleached sulphite, $63.50 per ton; Northern and Southern bleached kraft, $82.50 per ton; all ex-dock. A price of $66.00 per ton was set on soda pulp, delivered, and $40 per ton on groundwood, delivered. Prices are firm under a strong demand for all grades of pulp.

Rags

New cotton rags are reported very firm. The trend is viewed in some quarters of this market as upward, and while some advances are expected, current quotations are little changed.

Roofing rags are firm with expectations in some quarters of the trade of higher prices on No. 1 and No. 2 roofing stock, but no important changes have been reported at this date.

Old Rope and Bagging

Old rope prices are firm. Mill buying continues sufficiently active to absorb about all available supplies of old Manila rope. No important change from representative market prices has been reported at this date.

Old Waste Paper

Increased activity is reported in the old waste paper market this week. The directive price schedule of the OPA in effect since October 1 applies to all states East of the Rocky Mountains.

Twine

Demand continues active in the twine market, with heavy orders in some grades. Prices are firmly maintained, with some manufacturers allocating quantities to customers.

Rogers Paper Mfg. Co. Completes Expansion

The Rogers Paper Manufacturing Company, Manchester, Conn., has completed its consolidation, rehabilitation and expansion program in Manchester and Goodyear. S. M. Silverstein, vice-president and general manager announces that the so called East and West mills in Manchester have been completely dismantled, and we are now concentrating our production in what was formerly known as the North mill in Manchester and our new Goodyear Mill in Goodyear, Conn., near Danielson. The North Mill will henceforth be known as the Manchester mill and we have just completed a new office building to house our main office at this point, which is located at the corner of Mill and Oakland Streets in Manchester. In the Manchester mill we are producing high strength phenolic resin base plastics in sheet form. This mill has been completely rehabilitated and is the mill that was purchased by our company in 1928 from the A. Willard Case Company. At the Goodyear Mill we are concentrating on the production of electrical insulation for transformers and motors."

Hands Down Decision on Paper Articles

WASHINGTON, D. C., October 8, 1941—Interstate Commerce Commission has handed down a decision in connection with the movement of paper articles by motor truck in connection with Clark M. Rice, carrier.

In the syllabus in this case the Commission says: "Operation by applicant as a contract carrier by motor vehicle, of paper napkins, paper towels, and toilet paper from Swarthmore, Pa., to New York, N. Y., and points in Delaware, Maryland, and New Jersey, within 100 miles of Swarthmore, and of damaged or returned shipments of such commodities in the reverse direction, over irregular routes, found to be consistent with the public interest and the national transportation policy. Issuance of a permit approved upon compliance by applicant with certain conditions."

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P-30

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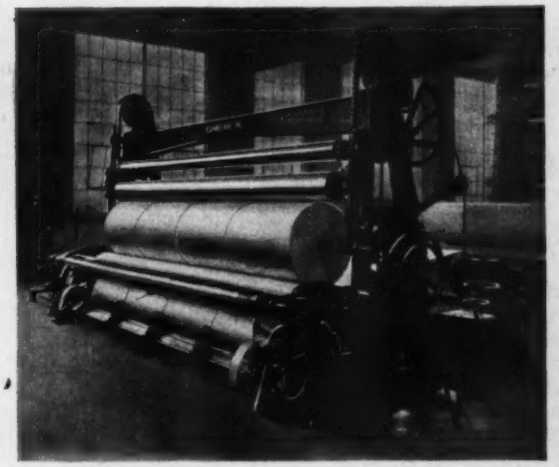
4. Will a carload of these rolls contain more actual weight of paper per car and so save on freight weight?
5. Will the rolls take up the minimum of storage space per ton and the minimum of wrapper tare per ton on account of greater weight per roll?



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CAMACHINE

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, October 15, 1941.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f.o.b., works. Demand reported good for the week.

BLEACHING POWDER — Quotations on bleaching powder are firm. Demand reported good for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are firm, under a good demand for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at 28 cents per pound; 80-100 mesh, at 28½ cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at 28 cents per pound. No quotations on French casein.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Demand reported good. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, car lots, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per long ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Government demand heavier. Market under mandatory priority ruling. Chlorine is currently quoted at $2 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices higher on some grades. "G" gum rosin is currently quoted at $2.46 per 100 pounds, in barrels. Savannah "FF" wood rosin is currently quoted at $2.45 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $2.97 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm and nominal. Demand active. Domestic salt cake is currently quoted at $15 per ton, in bulk; chrome cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16 per ton imported salt cake is nominal.

SODA ASH — Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported active for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and are reported unchanged for the current week. Pearl is currently quoted at $3.10 per 100 pounds; powdered starch at $3.20 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported good for the current week. The commercial grades are currently quoted at $1.15; iron free at $1.85 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $18 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@$6.00	
Superstandard	4.87½	"	5.25
Northern Standard Wrapping	4.50	"	5.00
Standard Wrapping	4.50	"	—
Tissues—Per Ream—Carlots			
White No. 1	1.07½	"	—
White No. 1 M. G.	.97½	"	—
White No. 1½	.85	"	—
White No. 2	.85	"	—
Anti-Tarnish M. G.	.90	"	—
Colored	1.00	"	—
Kraft	.90	"	—
Manila	.80	"	—
Unbl. Toilet, 1 M.	4.14	"	—
Bleached Toilet	5.60	"	—
Paper Towels, Per Case			
Unbleached, Jr.	3.80	"	—
Bleached, Jr.	2.30	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	8.75	@10.75	
No. 1 Manila Wrapping, 35 lb.	5.50	"	5.75
No. 2 Manila Wrapping, 35 lb.	5.25	"	5.50
Boards, per ton—			
News	48.00	@	—
Chip	48.00	"	—
Sgl. Mla. LL Chip	60.00	"	—
White Pat. Coated	75.00	"	—
Kraft Liners	60.00	"	—
Binders Boards	80.00	"	—

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$40.25@$47.25	$41.40@$48.50
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	32.20 " 37.75
75% Rag	24.75 " 29.00	25.90 " 30.50
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—
White, Assorted Items.
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—
White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$13.05@$14.75
No. 2 Glossy Coated	11.80 " 13.50
No. 3 Glossy Coated	11.00 " 12.50
No. 4 Glossy Coated	10.60 " 12.00
No. 1 Antique (watermarked)	10.25 " 11.75
No. 2 Offset	9.60 " 11.00
A Grade E. F.	9.35 " 10.75
A Grade S. & S. C.	9.60 " 11.00
B Grade E. F.	8.85 " 10.25
B Grade S. & S. C.	9.10 " 10.50
C Grade E. F.	8.50 " 9.75
C Grade S. & S. C.	8.75 " 10.00
D Grade E. F.	8.25 " 9.50
D Grade S. & S. C.	8.50 " 9.75

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	No prices		
Dry	No prices		
(Delivered)			
No. 1 Domestic and Canadian	40.00	@42.00	

Chemical Pulp

On Dock, Atlantic, Gulf and Pacific Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.62½	@	4.75
Prime Qualities—			
Easy-Bleaching Sulphite	3.17½	"	4.25
Strong Unbleached Sulphite	3.17½	"	4.25
News Grade, delivered			
Unbleached Sulphite	63.75	"	67.75
(On Dock, Atlantic Ports)			
Kraft Bleached	4.12½	"	—
Kraft Light & Strong	No price		
Kraft No. 1	3.60	"	4.75
(F. o. b. Pulp Mill)			
Kraft Domestic and Canadian	3.00	"	3.50
(Delivered)			
Soda Bleached	3.80	"	—

Add 60 cents per short ton, for charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	8.00	@	8.25
Silesias No. 1	4.50	"	4.75
New Unbleached	8.00	"	8.25
Blue Overall	5.75	"	6.00
Fancy	3.00	"	3.25
Washables	2.50	"	2.75
Mixed Khaki Cuttings	2.50	"	2.75
O. D. Khaki Cutings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	3.25	"	3.50
Miscellaneous	2.75	"	3.10
White, No. 2—			
Repacked	2.50	"	2.75
Miscellaneous	2.00	"	2.25
Third and Blues—			
Repacked	1.25	"	1.35
Miscellaneous	1.10	"	1.35

Roofing Rags—

No. 1	1.50	"	1.60
No. 2	1.35	"	1.50
No. 3 (bagging)	.95	"	1.00
No. 4	.90	"	.95
No. 5A	.90	"	.95

Foreign Rags

All prices nominal

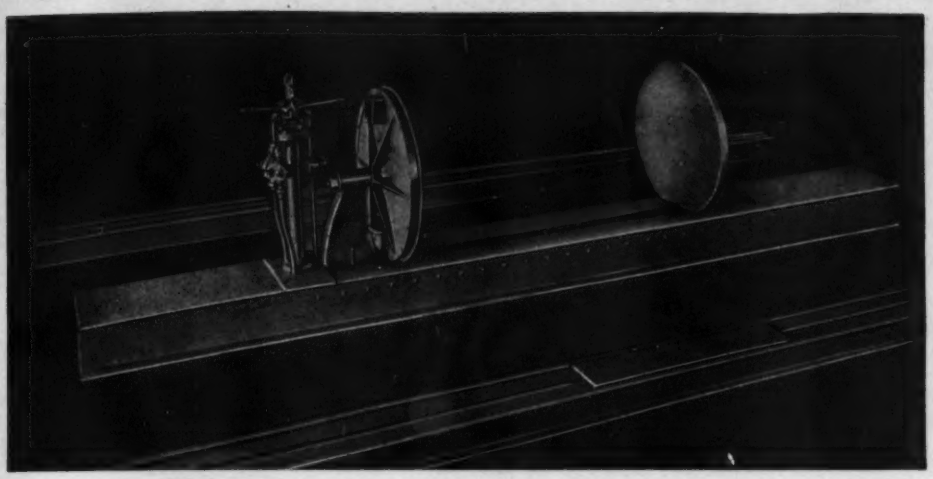
New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.00
No. 2 White Linens	6.50	"	7.00
No. 3 White Linens	4.00	"	—

W. & W. HEADING MACHINE



Furnished complete ready for installation. Operated by compressed air. Heads heated by steam or electricity. Built to suit different diameters and lengths of rolls. When installed only heads and supporting stands appear above floor line. Transfer trackage and shuttle cars furnished also.

Built in association with Williams & Wilson Limited, Montreal.

Montague Machine Company
Turners Falls, Mass.

"NON-USERS ARE THE LOSERS"

TENAX FELTS

50TH ANNIVERSARY

TENAX is "indicated"

It is becoming more difficult to get prompt deliveries on new machinery. Speed-up with TENAX! Clothe your present machines with TENAX FELTS and join the prompt production parade. TENAX is celebrating its fiftieth year by giving continuous service to papermakers.

"Non-Users Are The Losers"

LOCKPORT FELT COMPANY
NEWFANE, N. Y. U.S.A.

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.00	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shapperies.....	1.30	"	1.45
New Shapperies.....	1.45	"	1.50
French Blues.....	2.25	"	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1			
Nominal			
Domestic	4.50	@	4.75
Wool Tares, light....	4.25	"	4.50
Wool Tares heavy..	4.50	"	4.75
Bright Bagging.....	4.25	"	4.50
Manila Rope			
Foreign	6.00	"	6.25
Domestic	6.00	"	6.25
Jute Threads.....	4.00	"	4.25
Sisal Strings.....	2.75	"	3.00
Mixed Strings.....	1.10	"	1.40

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	—	@	—
Ordinary Hard White No. 1....*3.00		"	—
Soft White No. 1..*2.15		"	—
Soft White Extra..	—	"	—
Flat Stock—			
Stitchless	—	"	—
Overissue Mag....*1.67½		"	—
Solid Flat Book...*1.57½		"	—
Crumbled No. 1....	—	"	—
Ledger White Stock.*2.12½		"	—
Ledger Stock Colored*1.92½		"	—
Manila—			
New Env. Cut....*2.70		"	—
New Cuttings.....	—	"	—
Old Kraft Machine Compressed bales	*1.35	"	—
News—			
No. 1 White News	—	"	—
Strictly Overissue.	*.85	"	—
Strictly Folded....	*.75	"	—
Corrugated	*.72½	"	—
No. 1 Mixed Paper..	*.65	"	—

* OPA Maximum Prices in Effect October 1.

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp.....	.21	"	—
Fine Polished—			
Fine India.....	.26	"	—
Unpolished—			
Box	.17¼	"	—
Paper Makers.....	.17	"	—
Tube Rope.....	.19	"	—
Wall Paper.....	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope...	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java.....	.18	"	—
Mex. Sisal.....	.16	"	—
Manila	.26	"	—
Jute Carpet Threads.	3.00	"	3.25
Bleachery Burlap....	7.50	"	8.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	4.50	"	4.75
Scrap Sisal.....	3.25	"	3.50
Scrap Sisal for Shredding	3.75	"	4.00
Wool Tares—			
Foreign	(nominal)		
Domestic	5.00	"	5.50
Aust. Wool Pouches.	4.75	"	5.00
New Burlap Cuttings	5.50	"	5.75
Heavy baling bagging	4.25	"	4.50
Paper Mill Bagging..	4.00	"	4.25
No. 2 Bagging.....	.50	"	.60

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	.04½	@	.04¾
Fancy Percales....	.04¼	"	.05
New White No. 1.	.07¾	"	.08
New Light Flannelettes	.06	"	.06¼
Canton Flannel, Bleached	.08¼	"	.08½
Underwear Cutters, Bleached	.08¼	"	.08½
Silesias No. 1.....	.04½	"	.05
New Black Silesias..	.04½	"	.04½
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached.....	.08¼	"	.08½
Blue Cheviots....	.04¾	"	.05
Fancy	.01¾	"	.02
Washable	.01¾	"	—
Cottons—According to Grades—			
Blue Overalls.....	.06	"	.06¼
New Black, Soft..	.03	"	.03¼
Khaki Cuttings.....	.02¼	"	.02½
O. D. Khaki.....	.02½	"	.02¾
Corduroy	.02	"	.02¼
New Canvas.....	.05¼	"	.05¾
B. V. D. Cuttings...	.07¾	"	.08

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	4.00	@	—
Miscellaneous	3.00	"	—
White No. 2 Miscellaneous	2.50	"	3.00
Twins and Blues....	1.75	"	2.00
Old Blue Overalls....	2.25	"	2.50
Thirds and Blues....	1.75	"	—
Miscellaneous	1.25	"	1.50
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.80	"	—
No. 2.....	1.60	"	—
No. 3.....	1.50	"	—

Foreign Rags

(F. o. b. Boston)

Canvas .....(nominal)	
Dark Cottons.....(nominal)	
Dutch Blues.....(nominal)	
New Checks and Blues(nominal)	
Old Fustians.....(nominal)	
Old Linsey Garments.(nominal)	
New Silesias.....(nominal)	

PHILADELPHIA

Domestic Rags (New)

(Prices Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.07¼	@	.07½
New White No. 2.	.04½	"	.05
Light Silesias.. ..	.04½	"	.04¾
Silesias, No. 1 ..	.04	"	.04¼
Black Silesias, soft	.03¼	"	.03½
New Unbleached..	.07¼	"	.07½
Washable Prints...	.03¼	"	.03½
Washable No. 1..	.02	"	.02¼
Blue Overall..	.04½	"	.05½
Cottons—According to grades—			
Washable shredding	—	"	.01¾
Fancy Percales....	.03¼	"	.03½
New Black Soft...	.02¾	"	.03
New Dark Seconds	1.75	"	2.00
Khaki Cuttings—			
No. 1 (1) ...	.03	"	.03½
No. 2 Mixed.....	.02½	"	.02½
Corduroy	.01¾	"	.02¼
New Canvas.....	.04¾	"	.05¼
New Black Mixed.	—	"	.02½

Domestic Rags (Old)

White No. 1—			
Repacked	3.25	@	3.75
Miscellaneous	3.00	"	3.25
Thirds and Blues—			
Miscellaneous	2.00	"	2.25
Repacked	2.25	"	2.50
Black Stockings (Export)	Nominal		
Roofing Stock—			
Foreign No. 1....	Nominal		
Domestic No. 1...	2.00	"	2.05
Domestic No. 2...	1.85	"	1.90
Roofing Bagging..	1.75	"	1.80

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	3.50	@	4.25
Domestic	3.75	"	4.00
Manila Rope.....	5.00	"	5.50
Sisal Rope.....	3.75	"	—
Mixed Rope			1.00
No. 1.....	3.75	"	4.00
No. 2.....	1.75	"	1.80
Wool Tares, heavy..	4.00	"	4.25
Wool Tares, light		"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)

Shavings—			
Hard White Envelope Cuttings....*3.00		@	—
No. 1 Hard White Shavings	2.50	"	—
No. 1 Soft White..*2.15		"	—
White Blank News*1.65		"	—
No. 1 Mixed Shavings	—	"	—
Solid Ledger Stock..	—	"	—
No. 1 White Ledger.	*2.12½	"	—
No. 1 Mixed or Colored Ledger.....	*1.92½	"	—
No. 1 Books, heavy.	*1.57½	"	—
Overissue Magazine.	*1.67½	"	—
New Manila Envelope Cuttings *2.70		"	—
Container Manila....	—	"	—
New Kraft Cuttings.	*2.60	"	—
Kraft Paper (Old)...*1.50		"	—
No. 1 Mixed Paper..	*.65	"	—
Super-mixed Paper..	*.70	"	—
Box Board Cuttings.	*.72½	"	—
Corrugated Containers (old).....	*.82½	"	—
New Corrugated Cuttings	*.90	"	—
Overissue News....	*.85	"	—
No. 1 Baled News..	*.75	"	—

* OPA Maximum Prices in effect October 1.

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White.	*3.00	@	—
No. 1 Soft White.	*2.15	"	—
No. 2 Mixed.....	—	"	—
Solid Ledger Books.	—	"	—
Overissue Ledger Stock	—	"	—
White Ledger Stocks	*2.12½	"	—
Mixed Ledgers	*1.92½	"	—
No. 1 Heavy Books..	*1.57½	"	—
No. 1 Books, Light..	—	"	—
Crumpled Stitchless Book Stock.....	—	"	—
Manila Env. Cuttings	3.00	"	3.25
Manila Envelope Cuttings, extra quality	*2.70	"	—
White Blank News..	*1.65	"	—
No. 1 Kraft.....	—	"	—
Extra No. 1 Kraft....	—	"	—
Mixed Papers.....	*.65	"	—
Print Manila	—	"	—
Container Manila....	—	"	—
Old Newspapers.....	—	"	—
Paper Wool Strings.	—	"	—
Overissue News.....	*.85	"	—
Box Board Chips....	—	"	—
Corrugated boxes....	*.72½	"	—
Kraft corrugated boxes	*.90	"	—
New Kraft Corrugated Cuttings....*2.45		"	—
Screening Wrappers.	—	"	—

* OPA Maximum Prices in Effect October 1.

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	5.00	@	—
Sisal Rope.....	3.50	"	4.00
Mixed Rope.....	1.00	"	1.25
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Soft Jute Rope.....	5.00	"	5.50
Manila Rope—			
Foreign .....(nominal)			
Domestic	6.00	"	6.25

George L. Miller Dead

George L. Miller, director and manager of the Covington, Va., plant of the West Virginia Pulp and Paper Company, died at the Clifton Forge (Virginia) hospital on Friday, October 10, 1941. Mr. Miller was a son of the late S. M. Miller, who was associated with William Luke, the founder of the West Virginia Pulp and Paper Company when he was the manager of Jessup & Moore Paper Mills at Rockland, Delaware, near Wilmington.

George L. Miller was born at Rockland, Del., on August 16, 1873. He entered the service of the West Virginia Pulp and Paper Company as an accountant in 1894 and was transferred to the Covington Plant as Assistant Manager under William A. Luke, who was the resident manager at the time. Mr. Miller displayed unusual ability as a mill manager and his services were valued very highly by the company with which he was connected. He was president of the Citizens National Bank of Covington and a highly respected citizen of the community in which he lived for many years.

Mr. Miller was the brother of John R. Miller, vice-president of the West Virginia Pulp and Paper Company. He leaves one son, A. Reginald Miller, residing at Covington, Va.

Funeral service and interment were at Wilmington, Del., on Monday, October 13.

Buys Paper Under Walsh-Healey Act

WASHINGTON, D. C., October 15, 1941—For the week ending September 27, the government purchased $88,321.11 worth of paper under the Walsh-Healey act with the following orders:

$17,073.45 worth of wrapping paper for War QMC N. J. from American Associated Companies; $13,029 worth of bond paper for GPO from R. P. Andrews Paper Company; $13,201 worth of bond paper from Walker-Goulard-Plehn Company, Inc.; $13,421.10 worth of book paper for GPO from R. P. Andrews Paper Company; $18,280.40 worth of cover paper for GPO from Stanford Paper Company; $13,216.16 worth of offset paper for GPO from same company.